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ABSTRACT

This study estimates the proportion of transfer students (those who transfer from one college to another) in various categories and explores some potential explanations of the transfer phenomenon. The data base used was drawn from the base-year and the first and second followup data of the National Longitudinal Study of the High School Class of 1972. The extent of transfer in terms of percentages and estimated numbers of various transfer groups is discussed and the differences in transfer rates among subgroups are described (e.g., groups defined by sex, race, and levels of ability and educational aspiration). The differences between transfers and nontransfers in four-year and two-year institutions are examined and include comparisons between transfers and persisters, and between tranfers and withdrawals. Vertical transfers (e.g., students who moved from two-year to four-year colleges) are compared with four-year native students on background variables, financial aid status, satisfaction with college education, and academic performance. Tabulations of students' self-reported reasons for changing schools are presented separately by type of transfer and type of college. Three hypotheses are related to reasons for transferring; these center on the issue of an incongruency between the student and the institution. The major findings and implications are summarized. (SPG)

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National Longitudinal Study of High School Seniors

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National Longitudinal Study of High School Seniors

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FOREWORD

The National Longitudinal Study of the High School Class of 1972, a survey initiated by and conducted for the National Center for Education Statistics, began in the spring of 1972 with over 1,000 in-school group administrations of survey forms to a sample of approximately 18,000 seniors. In the followup surveys, the sample included almost 5,000 additional students from sample schools that were unable to participate in the base-year survey.

The data collected from the in-school and two followup surveys have been merged and processed. Results are being presented in a series of reports designed to highlight selected findings in educational, career, and occupational development. This report contains information about those students who moved among institutions of higher education over 2 years since initial matriculation. It includes the extent of transfer, the students' reasons for transfer, and variables associated with transfer.

Continuing followup requests for data from these individuals are planned through 1979 and perhaps beyond. This series of repeated observations will permit the examination of the relationships between schooling, work, and other experience to subsequent career choices as well as educational and labor-force participation of each of the selected individuals. Such information and the resultant analyses are important to those engaged in formulating legislative proposals and educational policy.

This report was prepared by Samuel S. Peng of the Research Triangle Institute under contract with the U. S. Department of Health, Education, and Welfare for the National Center for Education Statistics. The project director was J. P. Bailey, Jr., of RTI's Center for Educational Research and Development.

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I. INTRODUCTION

A. Backgrouhd of the Study

Transferring from one college to another has become an increasingly important trend in higher education. A recent national estimate indicated that about 600,000 students move among different types of institutions annually (Willingham, 1973). This estimate includes students who transfer from 2-year to 4-year institutions or vice versa, as well as students who move among the same type of institution. This trend of transferring, particularly between 2-year and 4-year institutions, is likely to grow because of the expansion of community colleges and the financial pressures of 4-year college attendance (Watson, 1974; Anderson & Peterson, 1973). In North Carolina, for example, transfers from 2-year to 4-year institutions increased 11.8 percent, and transfers from 4-year to 2-year colleges increased 11.2 percent from fall 1972 to 1973 (Davis & Balfour, 1974). Many other studies have also shown that 2-year colleges have become a major source of students for many 4-year institutions (e.g., Willingham, 1972; Trivett, 1974), and that 2-year colleges received as many students from 4-year colleges as they sent (e.g., Illinois Council on Articulation, 1970).

This growing trend raises several questions concerning transfer students. Of particular interest are the nature and extent of transferring: who transfers to what type of institution, and for what reason. The information is of value to students, parents, and counselors as well as educational decisionmakers. It may provide a basis for the formulation of admission policies and instructional and financial programs that may help students fulfill their educational goals. This assistance is particularly important to 2-year college transfers in view of the fact that more and more students enter 2-year colleges as they begin their higher education (e.g., Van Alstyne, 1974).

Previous research has provided little information that can be generalized to all institutions of higher education, since most studies have been limited to a specific institution or geographic region (e.g., Anderson & Riehl, 1971; Hodgson & Dickinson, 1974; Davis & Balfour, 1973). While those studies are valuable to the specific institutions studied, they do not provide a national picture of the transfer phenomenon, nor do they provide a sufficient basis for national policymaking. A large-scale study involving a representative sample of institutions is a prerequisite to answering questions regarding transfer students in higher education at the national level.

In addition, not much is known about the characteristics of transfer students and how they differ from their nontransferring counterparts (Kintzer, 1973). A comprehensive investigation of the differences between nontransfer and transfer students in background and individual characteristics, as well as their integration into college systems, is needed to provide some information on which national educational programs to meet transfer student needs might be based.

B. Purposes of the Study

The primary purpose of this study is, therefore, to estimate the proportion of transfer students in various categories and to explore some potential explanations of the transfer phenomenon. Specifically, the study was designed to accomplish the following objectives:

(1) To obtain national estimates of the number and proportion of students in various transfer categories;
(2) To search for variables that could be used to identify students who are likely to transfer;
(3) To compare students who transfer from a 2-year to a 4-year college with those who enroll in a 4-year college immediately after high school;
(4) To describe students' self-reported reasons for transferring; and
(5) To infer from the data some potential explanations for transferring.

C. The Data Base

The data used in this study were drawn from the base-year and the first and second followup data of the National Longitudinal Study of the High School Class of 1972 (NLS). The NLS data base is comprehensive; its longitudinal design, based upon a national probability sample, permits analyses that provide information about the psychological, educational, and career development of people in their early adulthood. The NLS was designed to discover what happens to young people after they leave high school and to relate this information to their prior educational experiences and their personal and biographical characteristics. Educational and work experiences, plans, aspirations, attitudes, and personal background characteristics were measured over three points in time on a sample of over 20,000 high school seniors of the class of 1972. The base-year data were collected in the spring of 1972, the first followup data were collected in the fall and winter of 1973-74, and the second followup data were collected in the fall and winter of 1974-75. Appendix A gives a detailed description of the sample, instruments, and data collection procedures.

Of the NLS participants who answered the first followup survey, about 50 percent were enrolled in about 1,800 diverse institutions of higher education in the fall of 1972 (6,196 in 4-year colleges and 3,080 in 2-year colleges). Some of these students failed to provide information about their education in the fall of 1973 or failed to continue their participation in the second followup survey, and consequently their educational status could not be determined for the fall of 1973 or 1974 and hence their transfer status could not be ascertained. The final number of college students retained for this study was 8,892 (5,974 initially enrolled in 4-year colleges and 2,918 initially enrolled in 2-year colleges). Thus, data about transfer status were available for 96 percent of the students who enrolled in a higher educational institution. There were slightly more men than women, about 52 and 48 percent, respectively. There were about 8 percent blacks, 3 percent Hispanics (i.e., Mexican-American or Chicano, Puerto Rican, and other Latin-American origin), 86 percent white, and 3 percent others. As would be expected of a college population, the majority of these students were from the families of middle or higher socioeconomic status (SES)[1] (only about 12 percent of 4-year college students and 16 percent of 2-year college students were from low SES families), from college preparatory high school programs, and had high academic ability[2] (see table 1).

D. Weighting and Significance Testing

The NLS sample is highly stratified, multi-staged, and clustered. Each case must therefore be weighted by the inverse of its probability of selection to obtain unbiased estimates of population parameters. Thus, the percentages, means, standard deviations, and regression weights presented in this report are all based upon properly weighted estimates. The standard errors of sample statistics from this complex design are larger than those from a simple random sample of the same size and should be adjusted accordingly. For example, standard errors of percentages for this complex probability sample can be approximated as a function of the estimated percentage,

---

[1] SES was based upon a composite of father's education, mother's education, parental income, father's occupation, and a household items index. Factor analysis revealed a common factor with approximately equal loadings for each of the five components. Missing components were imputed as the mean of the subpopulation of which the respondent was a member, defined according to cross-classification of race, high school program, and aptitude. The available standardized components, both imputed and nonimputed, were averaged to form an SES when at least two nonimputed components were available. The continuous SES score was then assigned to one of the quartiles on the basis of the weighted frequency distribution of the composite score. The first quartile, the middle two quartiles, and the fourth quartile were respectively denoted as the low, middle, and high SES. In some analyses, the continuous SES score was used.

[2] The ability measure was a composite score of four tests: Vocabulary, Reading, Letter Groups, and Mathematics. A factor analysis revealed a general academic ability factor that was represented by an equally weighted linear composite of these four standardized tests. The composite score was classified into a low, middle, or high category corresponding to the first quartile, the middle quartiles, and the fourth quartile.

Table 1.–Percentage of sample members by various background characteristics

Characteristics	4-Year college	2-Year college
Sex		
Male	52.00	53.01
Female	48.00	46.99
Race		
Black	8.52	7.15
Hispanic	1.89	4.97
White	86.18	83.14
Other	3.41	4.74
SES		
Low	11.97	16.46
Middle	41.53	53.70
High	46.42	29.60
Unknown	0.08	0.24
High school program		
General	19.02	35.82
Academic	76.41	48.07
Voc tech	4.55	16.09
Unknown	0.02	0.01
Ability		
Low	5.11	13.41
Middle	27.57	39.82
High	41.31	19.56
Unknown	26.00	27.21
Region		
Northeast	28.65	21.60
North Central	29.70	23.17
South	28.42	24.83
West	13.23	30.40
Sample N	5,974	2,918

the sample size, and the estimated design effect, which is the ratio of the sampling variance of the statistic for the sample to the sampling variance of the statistic for a simple random sample of the same size. Thus, the approximate standard error of percentages in this paper can be obtained by the following formula:

$$S.E.\ (P) = \sqrt{\frac{p(1-p)}{n}} \cdot \sqrt{D}$$

where p is the percentage, D is the design effect, and n is the actual sample size (see Kish, 1957; Kish & Frankel, 1970). The average design effect for this study is estimated to be approximately 1.35; thus the usual standard errors should be mutiplied by 1.35, which is about 1.16.

To contrast two subpopulation percentages, $d = p_1 - p_2$, the standard error of the difference may be approximated by taking the square root of the sum of the squares of the standard errors for p_1 and p_2. The approximation will be conservative because of the exclusion of the covariance term for p_1 and p_2 in the estimation formula. In comparing two subclasses of students, the covariance term tends to be positive because of the positive correlation caused by the sample clusters of 18 students per school. The effect of this positive correlation is to reduce the standard error of the difference.

The significance tests of percentages and associated probabilities employed in this report are based on the normal approximation to the binominal distribution. It should be noted that the approximation may not be good for small sample sizes or extreme percentages.

E. An Overview of the Remainder of the Report

The remainder of this report is organized according to the objectives described previously. Chapter II describes the extent of transfer in terms of percentages and estimated numbers for various transfer groups. In addition, differences in transfer rates among subgroups are described (e.g., groups defined by sex, race, and levels of ability and educational aspiration). Chapter III focuses on the differences between transfers and nontransfers in 4-year and 2-year institutions. The comparisons include those between transfers and persisters, and between transfers and withdrawals. Chapter IV compares vertical transfers (i.e., students who moved from 2-year to 4-year colleges) and 4-year native students on background variables, financial aid status, satisfaction with college education, and academic performance. Chapter V follows with tabular summaries of students' self-reported reasons for changing schools. Tabulations are presented separately by type of transfer and type of college. Chapter VI presents tests of several hypotheses related to reasons for transferring; these center on the issue of an incongruency between the student and the institution. The last chapter, Chapter VII, summarizes the major findings and discusses the implications. Additional information given cursory treatment in the text has been included in the appendixes.

II. EXTENT OF COLLEGE TRANSFERS

A simple but significant question about college transfers is what proportion of students transfer, and what is their transfer pattern? Of particular interest is the proportion of 2-year college students who transfer to 4-year institutions. This proportion may reveal a predictable source of student enrollment for the 4-year institutions. Previous studies have not provided a consistent national picture about college transfers. For example, one study (Holstrom & Bisconti, 1974) found that about 52 percent of full-time 2-year college students transferred to 4-year institutions over a 4-year period, while another (Van Alstyne et al., 1973) found that about 36 percent of 2-year college full-time students transferred to 4-year colleges over a similar time period. Burt (1972) indicated that new transfer students in 1968 numbered about 456,000, while Willingham (1972) estimated the number to 600,000 annually. The inconsistencies may reflect the changes of college-going trends in recent years, or they may reflect the nonrepresentative samples of institutions. To meet this need, two questions are addressed in this chapter: What percent of American college students move among institutions of higher education annually? Are there differences in transfer rates among subgroups defined by institutional characteristics and by personal background variables?

To answer these questions, various categories fo college transfer students were defined. Based upon educational status in October 1972, 1973, and 1974, students were classified into persisters, transfers, and withdrawals. Detailed tree diagrams, including the percentage of students at each decision point for those students enrolled in a 4-year college or a 2-year college, are presented in appendix B.

The transfer students were further divided into the following categories:

(1) *4→2 Transfers*: students transferring from a 4-year college to a 2-year college, often called reverse transfers in the literature;
(2) *2→4 Transfers*: students transferring from a 2-year college to a 4-year college, often called vertical transfers;
(3) *4→4 Transfers*: students transferring from a 4-year college to another 4-year college; and
(4) *2→2 Transfers*: students transferring from a 2-year college to another 2-year college. These last two categories are often called horizontal transfers. The numerical labels were used to designate transfer categories for clarity and to avoid the value-judgment connotations implicit in such terms as reverse and vertical.

A. Total Transfer Rates

1. Transfers in the First Year

Many students moved among colleges during or at the end of their first year of matriculation. The percentage of transfers, based upon initial total enrollment in 4-year or 2-year colleges, is shown in figure 1. About 8 percent of 4-year college students moved to other 4-year institutions, and about 3 percent moved to 2-year colleges. During the same period of time, about 6 percent of 2-year college students moved to 4-year colleges, and about 3 percent moved to other 2-year colleges. It is estimated that a total of 142,141 (the total sum of the four transfer categories) of the high school seniors of 1972 who enrolled in colleges by October 1972 transferred by October 1973. This indicates that 1 out of 10 students moved during the first year of college. The 4→4 transfer group was the largest, and the 2→2 transfer group was the smallest, in terms of both percentage and actual number of transfers.

An interesting point should be noted; that is, the number of 4→2 transfer students was about the same as the number of 2→4 transfer students (see Figure 1). This supports previous findings that the 2-year colleges receive as many students from the 4-year colleges as they send (Illinois Council on Articulation, 1970).

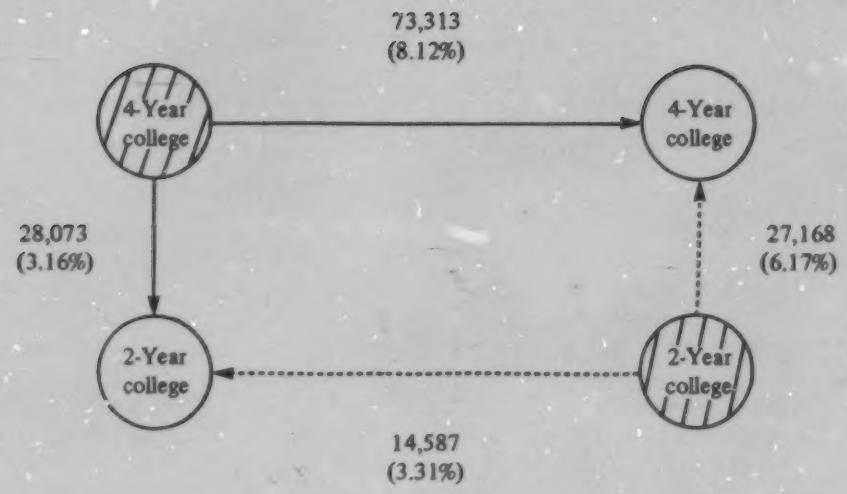

Figure 1. Percentages and estimated national totals of students who transferred during or at the end of their *first* year in college. (Initial college is represented by shaded circle.)

NOTE.-- Sample N for 4-year college initial enrollment was 5974, and for 2-year college it was 2918.

2. Transfers in the Second Year

Many students remained in the same college for more than one year and then transferred to another college. As would be expected, this was especially common among 2-year college students. Based upon the initial enrollment of October 1972, about 17 percent of 2-year college students transferred to 4-year institutions during or at the end of their second year (see figure 2). The percentage of 2→4 transfers based upon sophomore enrollment was greater (about 29 percent). In either case, a greater number of 2-year college students transferred to 4-year colleges during or at the end of the second year than during the first year.

Transferring between 4-year colleges was still substantial during or at the end of the sophomore year. The percentage was about 6 percent based on the initial enrollment, and about 9 percent based on the enrollment of sophomore nontransfer students. This indicates that proportionally there were as many 4→4 transfers in the second year as in the first year of college.

The 4→2 transfers made up about 1 percent, based upon the initial enrollment. Although small, this group of students is particularly interesting because they could be expected to have completed a 2-year college degree by this point in time if they had started at a 2-year institution. Their reasons for transferring are discussed in chapters V and VI.

Overall, it is estimated that a total of 146,770 (the total of the four transfer categories) of the high school seniors of 1972 who enrolled in colleges by October 1972 transferred during or at the end of the sophomore year. The 2→4 transfer group was the largest, and the 2→2 transfer group was the smallest in terms of actual number of transfers (see figure 2).

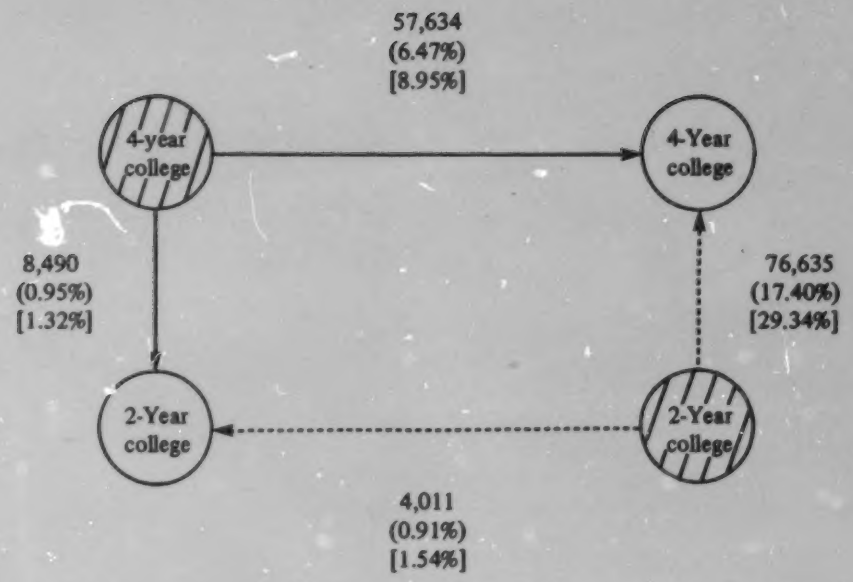

Figure 2. Percentage and estimated national totals of students who transferred during or at the end of their *second* year in college. (Initial college is represented by shaded circle.)

NOTE.– ( ) = based upon the initial enrollment.
[ ] = based upon the enrollment of those who persisted for one year.
Sample N for 4-year college initial enrollment was 5974, and for 2-year college it was 2918.

3. Total Transfers Over 2-Years

The estimation of the total percentage and the number of students who transferred among colleges over a 2-year period requires further consideration of the changes of student college-going status. The four transfer groups are further specified in table 2. The specifications indicate the type of initial and final colleges. Thus, a student who entered a 4-year college, transferred to a 2-year college, and then transferred back to a 4-year college whould be indicated by a 4→4 transfer as would a single transfer between 4-year colleges. If other classification schemes are of interest, the estimates of percentages and numbers can be obtained from appendix B.

The total percentages and numbers of students for the transfer groups are summarized in figure 3. Two years after initial matriculation, slightly over 24 percent of 2-year college students transferred to 4-year colleges. (It should be noted that about 52 percent left school, and 24 percent were still in 2-year colleges.) Those transfers constituted about 14 percent of the total 4-year college enrollment. (This was calculated on the basis of estimates presented in Appendix B.) The proportion of 2-year college students who transferred to 4-year institutions was consistent with findings of some previous studies (e.g., Van Alstyne, 1974). However, the total number of transfers was smaller than that estimated by Willingham (1972), based upon regional or institutional studies.

Table 2.–Transfer specification

Transfer group	College-going status		
	October 1972	October 1973	October 1974
1. 4→4 transfers:	4	C	D4
	4	D4	C
	4	D4	D4
	4	2	4
	4	W	D4
2. 2→2 transfers:	2	C	D2
	2	D2	C
	2	D2	D2
	2	4	2
	2	W	D2
3. 4→2 transfers:	4	C	2
	4	D4	2
	4	2	C
	4	2	D2
	4	W	2
4. 2→4 transfers:	2	C	4
	2	D2	4
	2	4	C
	2	4	D4
	2	W	4

NOTE.-- 4 = 4-year college

4 = 2-year college

D = Different 4-year or 2-year college

C = Continuing in the same college

W = Withdrawing from study

About 3 percent of the 4-year college students moved to 2-year colleges. This figure did not differ much from the first year's 4→2 transfer rate because about a quarter of the first-year group went back to 4-year colleges, and about a quarter withdrew from colleges (see appendix B). Figure 3 also shows that about 16 percent of 4-year college students moved among 4-year colleges over 2 years. The total number of such 4→4 transfers was slightly greater than that of the 2→4 transfers.

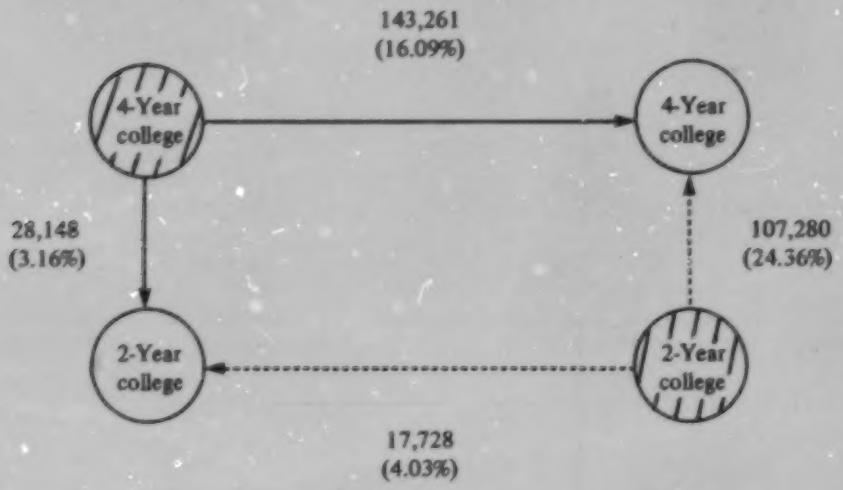

Figure 3. Total percentages and estimated number of students who transferred over 2 years. (Initial college is indicated by shaded circle.)

NOTE.– Sample N for 4-year college students was 5874, and for 2-year college students it was 2918.

B. Transfer Rates by Subgroups Defined by Background Variables

A question of interest is whether there are differences in transfer rates among subgroups defined by background variables. This section presents transfer rates for varying subgroups and describes their differences. However, the primary focus of this section is to *describe* group differences. In later chapters, selected variables will be considered jointly in more detail.

The following background variables are included in the analyses: sex, race, socioeconomic status (SES), aptitude, educational aspiration, high school program, geographical region of high school where graduated, college grades, and field of study. Geographic region was used as a variable because there were more 2-year colleges available to residents of the Western region, and relatively more students in the South and West than in the Northeast or North Central were enrolled in 2-year colleges (see table 1). Consequently, it would be more likely for students in those two regions than in other regions to transfer from 2-year to 4-year institutions or vice versa. Other variables were selected because they reflect students' background characteristics (sex, race, SES), individual attributes (aptitude, aspiration), high school training (high school program), and college experience (college grades, field of study)—variables that might be related to college transfer behavior.

The transfer rates presented in the following descriptions are the total transfer rates over 2 years. This choice is particularly appropriate for 2-year college students because, to many of these students, the second year is the final year, and transferring is necessary to continue higher education. As previously defined in table 2, the transfer designation indicates the type of the initial and final colleges. Thus, a student who entered a 4-year college, transferred to a 2-year college, and then transferred back to a 4-year college would be indicated by a 4→4 transfer, as would a single transfer between 4-year colleges.

The percentages of students who transferred by October 1974 are summarized in tables 3-a and 4-a, respectively, for the 2-year and 4-year institutions for subgroups formed by nine variables. The tests of significance for subgroup differences are presented in tables 3-b and 4-b. Several patterns of group differences can be seen:

(1) There were no substantial differences in any of the four transfer rates between men and women. This finding does not support earlier findings that men are more likely than women to transfer, particularly from 2-year to 4-year colleges (e.g., Holmstrom & Bisconti, 1974). The inconsistency could be due to the lack of representative samples in the previous studies or to a different time period (e.g., 4-year time span in Holmstrom and Bisconti's study), in which more men than women reentered colleges after a few years of work. Nevertheless, the current finding of no sex differences in the 2→4 transfers may indicate that more women than before are becoming career-oriented and desire higher education.

(2) Differences in the 4→4 transfer rates among several subgroups were significant. As shown in table 3-b, whites were more likely than blacks to transfer; students of high SES were more likely than students of low SES to transfer. Likewise, students of higher educational aspiration and higher college grade-point average were more likely to transfer than those with low aspirations and averages. In summary, the groups more likely to transfer are characterized as being white, of high SES, academic high school program participants, high aspiration, and high college achievement.

(3) Differences in the 4→2 transfer rates existed between the West and North Central regions. This is probably because there are more 2-year colleges in the West than in the North Central region, and thus there are more opportunities for students in the West to move from 4-year to 2-year colleges. Another difference in the 4→2 transfers existed between low and high achievement groups; students having lower college grade-point averages were more likely to transfer from 4-year to 2-year colleges. This finding lends support to an argument that many 4-year college students intend to improve their grade-point averages in a 2-year college, and then continue in a 4-year college (Kuznik, Maxey & Anderson, 1974).

(4) There were no substantial group differences in the 2→2 transfer rates; that is, students of this sort did not concentrate in any subgroup defined by the selected background variables.

(5) Differences in the 2→4 transfer rates were evident among all subgroups except those defined by sex. As shown in table 4-b, whites had a greater 2→4 transfer rate than blacks, and blacks had a greater transfer rate than Hispanics. The South had the highest and the West had the lowest 2→4 transfer rates. The reason why the West had the lowest 2→4 transfer rate, as opposed to the highest 4→2 transfer rate, is unknown. It may be due to a greater proportion of Hispanics living in the West than other regions; Hispanics had the lowest 2→4 transfer rate and the highest 4→2 transfer rate among the race groups. Other group differences were in an expected pattern. Students in academic fields and students of higher SES, ability, aspiration, and college academic performance had a greater 2→4 transfer rate than students of lower levels on these variables.

Table 3-a.–Percentage of 4-year college students who transferred by the end of the sophomore year: by subgroups

Subgroup	4→4 Transfers	4→2 Transfers	Non-transfers[1]	Sample N
Sex				
Men	15.15	3.37	81.48	3,034
Women	17.07	2.93	79.99	2,940
Race				
Black	11.73	3.20	85.08	673
Hispanic	15.17	9.29	75.55	148
White	16.72	2.87	80.42	4,930
SES				
Low	12.79	2.40	84.81	853
Middle	15.13	3.48	81.38	2,473
High	17.79	3.07	79.15	2,643
Ability				
Low	15.32	3.54	81.14	368
Middle	14.96	3.92	81.12	1,627
High	17.31	2.62	80.08	2,274
High school program				
General	14.13	3.79	82.08	1,201
Academic	16.96	3.04	80.01	4,482
Voc tech	9.44	2.59	87.96	290
Region				
Northeast	16.11	2.60	81.29	1,437
North central	16.05	2.21	81.73	1,623
South	16.00	3.47	80.52	2,113
West	16.21	5.81	77.98	801
Educational aspiration				
< College	4.89	4.06	91.04	211
2-year college	5.39	8.27	86.34	146
≥ 4-year college	16.78	3.03	80.18	5,478
Field of study				
Academic	16.51	3.13	80.37	5,084
Nonacademic	12.17	3.45	84.37	399
College grade				
≥ A-	20.57	0.73	78.70	498
B+ to B-	18.47	1.91	79.62	2,343
C+ to C-	13.98	4.31	81.71	2,475
< C-	9.19	6.40	84.41	339

[1] This included persisters and withdrawals.

Table 3-b.–Group differences in transfer rates (in percent) from 4-year colleges

Group comparison	Differences in transfer rates	
	4→4	4→2
Sex:		
Male-female	-1.92	0.44
Race:		
Black-white	-4.99*	.33
Hispanic-white	-1.55	6.42†
Black-Hispanic	-3.44	-6.09†
SES:		
Low-high	-5.00*	-.67
Middle-high	-2.66	.41
Low-middle	-2.34	-1.08
Ability:		
Low-high	-1.99	.92
Middle-high	-2.35	1.30
Low-middle	.36	-.39
High school program:		
General-academic	-2.83	.75
Voctech-academic	-7.52*	-.45
Voctech-general	-4.69	-1.20
Region:		
Southwest	-.21	-2.34
North central-west	-.16	-3.60*
Northeast-south	.11	-.87
North central-south	.05	-1.26
Educational aspiration:		
< coll. to >4 yr. coll.	-11.89*	1.03
2 yr. coll. to >4 yr.	-11.39*	5.24†
< coll. to 2 yr. coll.	-.50	-4.21†
Field of study:		
Nonacademic-academic	4.34	.32
College grade:		
(≥A-) to (B+ to B-)	2.10	-1.18
(≥A-) to (C+ to C-)	6.59*	-3.58*
(≥A-) to (<C-)	11.38*	-5.67*
(B+ to B-) to (C+ to C-)	4.49*	-2.40
(B+ to B-) to (<C-)	9.28*	-4.49*
(C+ to C-) to (<C-)	4.79	2.09

* $p<.01$ (a two-tailed test).

† not significant at the .01 level because of greater standard error.

Table 4-a.–Percentage of 2-year college students who transferred by the end of the sophomore year: by subgroups

Subgroup	2→2 Transfers	2→4 Transfers	Non-transfers[1]	Sample N
Sex				
Men	4.33	24.85	70.83	1,504
Women	3.69	23.82	72.49	1,414
Race				
Black	3.48	17.93	78.58	295
Hispanic	6.80	9.08	84.12	179
White	3.90	26.05	70.04	2,279
SES				
Low	2.85	16.25	80.89	581
Middle	3.84	22.78	73.38	1,539
High	5.05	31.95	63.01	789
Ability				
Low	5.68	13.91	80.40	441
Middle	4.68	22.37	72.95	1,091
High	2.18	35.91	61.92	517
High school program				
General	4.56	20.46	74.98	1,050
Academic	3.95	32.09	63.97	1,377
Voctech	3.06	10.00	86.93	490
Region				
Northeast	3.10	23.05	73.85	529
North central	4.40	25.22	70.38	574
South	2.87	32.07	65.06	898
West	5.34	18.35	76.31	917
Educational aspiration				
< College	2.38	4.44	93.18	443
2-year college	4.92	8.36	86.73	473
≥4-year college	4.26	33.42	62.32	1,928
Field of study				
Academic	4.26	31.95	63.78	1,797
Nonacademic	3.67	9.46	86.87	854
College grade				
≥ A-	2.95	42.76	54.29	206
B+ to B-	2.99	29.04	67.96	1,104
C+ to C-	5.15	20.50	74.35	1,276
< C-	5.72	3.73	90.55	154

[1] This included persisters, withdrawals, and those completing two-year degrees, but discontinuing further study.

Table 4-b.–Group differences in transfer rates (in percent) from 2-year colleges

Group comparison	Difference in transfer rates	
	2→2	2→4
Sex:		
Male-female	0.64	1.03
Race:		
Black-white	-.42	-8.12*
Hispanic-white	2.90	-16.97*
Black-Hispanic	-3.32	8.85*
SES:		
Low-high	-2.20	-15.70*
Middle-high	-1.21	-9.17*
Low-middle	1.16	-6.53*
Ability:		
Low-high	[illegible]	-22.00*
Middle-high	2.50	-13.54*
Low-middle	3.50	-8.46*
High school program:		
General-academic	.61	-11.63*
Voctech-academic	-.89	-22.09*
Voctech-general	-1.50	-10.46*
Region:		
Southwest	-2.47	13.72*
North central-west	-.94	6.87*
Northeast-south	.23	-9.02*
North central-south	1.53	-6.85
Educational aspiration:		
< coll. to >4 hr. coll.	-1.[illegible]8	-28.98*
2-yr. coll. to >4 yr.	.6[illegible]	-25.06*
< coll. to 2-yr. coll.	-2.54	-3.92
Field of study:		
Nonacademic-academic	-.59	22.49
College grade:		
(≥A-) to (B+ to B-)	-.04	13.72*
(≥A-) to (C+ to C-)	-2.20	22.26*
(≥A-) to (<C-)	-2.77	39.03*
(B+ to B-) to (C+ to C-)	-2.16	8.54*
(B+ to B-) to (<C-)	-2.73	25.31*
(C+ to C-) to (<C-)	-.57	16.77*

* $p < .01$ (a two-tailed test)

C. Transfer Rates by the Type of Institution

This section presents percentages of transfers by type of institution. Institutions may be characterized by length of program in years, type of control (e.g., public versus private), size, and selectivity level.

1. Length of Program in Years

As shown previously, transfers were defined separately for 4-year and 2-year institutions because of differences in the nature of their curricula. According to the count at the end of the second year of enrollment, there was a greater proportion of 4→4 transfers than of 2→2 transfers (about 16 percent versus 4 percent). The majority of the transfer students from the 2-year colleges were moving to the 4-year colleges (about 24 percent of the initial total enrollment). On the other hand, only about 3 percent of the 4-year college students transferred to the 2-year colleges (see figure 3).

2. Type of Control

Several studies have shown that a larger proportion of students from private than from public colleges transferred to other institutions within a 4-year period (e.g., Holmstrom & Bisconti, 1974; Van Alstyne et al., 1973). The NLS data supported this finding. As shown in table 5-a, the overall transfer rates were significantly higher for students from private institutions. (These rates were based on those individuals who entered college by October 1972 and who transferred sometime during the ensuing 2 years.) Specifically, about 19 percent from the 4-year private institutions transferred to other 4-year schools, compared to about 15 percent of public college students. Students from private 2-year colleges had a 2→4 transfer rate of about 35 percent, compared to 24 percent of students from public 2-year institutions. Both 4→2 transfers and 2→2 transfers were in the same direction—private institutions having a greater percentage than public institutions; however, the differences were not significant.

Table 5-a.–Transfer rate (in percent) by type of institutional control

Control of institution	4-year college				2-year college			
	4→4 Transfers	4→2 Transfers	Non-transfers	N	2→2 Transfers	2→4 Transfers	Non-transfers	N
Public	14.79	3.09	82.12	4,004	3.75	24.12	72.13	2,575
Private.	19.18**	3.27	77.55	1,597	8.35	34.52**	57.13	173

** Students at private institutions had a significantly greater transfer rate than those at public institutions ($p<.01$, a one-tailed test).

A related question is what percentage of students transferred from a public to a private institution, and vice versa. To answer this question, students who transferred during or at the end of their first year of matriculation were cross-classified by the type of control of their initial and destination colleges. Results indicate that the majority of private as well as public college transfer students moved to public institutions. For example, about 61 percent of 4→4 transfers and 92 percent of 4→2 transfers from private institutions moved to public institutions whereas only about 26 percent of 4→4 transfers and 3 percent of 4→2 transfers from public institutions moved to private institutions. A similar pattern existed among transfer students from 2-year colleges (see table 5-b). This phenomenon seems to indicate that financial and/or academic pressure could be an important factor in the transferring process since private institutions are more competitive and expensive than public institutions.

Table 5-b.–Transfer students cross-classified by type of control of initial and destination colleges

Transfer category	Control of initial college (1972)	Percent control of destination college (1973)		N
		Public	Private	
4→4	Public	73.94%	26.06%	289
	Private	61.15	38.85	169
4→2	Public	96.92	3.08	134
	Private	91.55	8.45	40
2→2	Public	95.73	4.27	96
	Private	100.00	0.00	10
2→4	Public	79.17	20.83	148
	Private	53.01	46.99	25

3. Selectivity Level

Analysis of the data by selectivity and size of the institution is another approach to describing transfer rates. Information about the institution's selectivity level and size was obtained in part from sources other than the NLS data. A preliminary analysis, using Astin's (1971) college selectivity index[1] with eight levels and college size (Suchar, Van Dusen, & Jacobson, 1974) with five levels, is discussed below. The sample size was reduced, since not all colleges had the supplementary information.

Transfer rates did not vary in a linear manner with the selectivity levels of the 4-year institution. In colleges of selectivity levels 1 through 6, the 4→4 transfer rates were generally in an ascending order (table 6-a). However, students from institutions of selectivity levels 2 and 7 had lower percentages of transferring than students of other institutional levels. As for 4→2 transfers, there were almost no differences, except that students from the highest selectivity level had the lowest percentage of 4→2 transfers. It is noteworthy that less than 1 percent of students in 4-year institutions of highest selectivity (level 7) moved to 2-year institutions.

Transfers from the 2-year institutions were not included in the selectivity analysis because only a few such institutions had a selectivity level greater than 3; consequently, little variability would be expected across so few levels.

It was concluded that the 4-year college-transfer rates were not linearly related to the institutional selectivity level; the transfer rates of students from the more selective institutions were not necessarily higher than those from less selective institutions.

Another aspect of the transfer pattern relating to selectivity level is the proportion of students who transferred from low to high selectivity institutions, and vice versa. Based upon available data, about 64 percent of 4-year college transfers from high selectivity colleges (levels 4 to 7) in October 1972 moved to low selectivity colleges (below level 4) in October 1973, and about 36 percent moved to colleges of similar selectivity levels. Of those transfers whose initial colleges were of low selectivity, 23 percent moved to institutions of high selectivity, and 77 percent moved to colleges of similar selectivity (see table 6-b). The higher proportion of students moving from high to low selectivity colleges may indicate that competitiveness is a factor in the transferring process.

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[1] Selectivity index is based upon the average SAT and/or ACT scores of the entering students. There are eight levels of selectivity, 1 being the lowest and 7 being the highest level, and 0 (unknown) indicating that no direct estimate of selectivity was available. In general, the "unknowns" tend to be around levels 1 and 2 (Astin, 1971, p. 24).

Table 6-a.–Transfer rates (in percent) of 4-year colleges by selectivity level of institutions

Selectivity level	4→4 Transfers	4→2 Transfers	Non-transfers	N
Unknown 0	17.54	3.41	79.05	221
Low 1	16.24	2.99	80.77	461
2	12.71	2.79	84.50	586
3	16.61	3.83	79.56	826
4	16.68	3.20	80.12	952
5	10.56	2.07	79.37	546
6	18.11	3.23	78.66	213
High 7	11.73	.77	87.50	205

NOTE.–Nontransfer includes persisters, graduates, and withdrawals.

Table 6-b.–Initial and destination college selectivity level of 4-year college transfer students

Selectivity of initial college in October 1972	Selectivity of destination college in October 1973 (in percent)		N
	High	Low	
High	35.86	64.14	198
Low	23.14	76.86	363

Note.–(1) High - Selectivity levels are greater than or equal to level 4.
Low - Selectivity levels are lower than level 4 or are unknown.

(2) 4→4 and 4→2 transfers were combined because of small sample size and small number of high selective 2-year colleges.

4. Size of Institution

The size of institutions seems to be related to transferring. As shown in table 7-a, students from the larger 4-year institutions had lower percentages of transfers than those from smaller institutions. This suggests that large institutions have greater holding power than smaller ones, probably because of greater variety of programs and social opportunities. The differences in 4→2 transfers were not in a linear pattern, however. Students from institutions over 15,000 had the highest 4→2 transfer rate.

Unlike students in the 4-year institutions, students from large 2-year institutions had a higher 2→2 transfer rate than students from smaller colleges. This trend, however, was not shown in 2→4 transfers; both small and large institutions had a higher vertical transfer rate than institutions of middle size (see table 7-a).

Table 7-a.–Transfer rate (in percent) by size of institution

Institutional size	4-year college				2-year college			
	4→4 transfers	4→2 transfers	Non-transfers	N	2→2 transfers	2→4 transfers	Non-transfers	N
≤2,000	19.89	3.14	76.97	1,154	3.58	32.44	63.98	853
2,001 - 5,000	16.90	2.40	80.70	1,011	4.09	19.24	76.67	646
5,001 - 10,000	14.09	3.41	82.50	935	5.44	16.44	78.12	253
10,001 - 15,000	13.08	1.71	85.21	397	5.01	18.26	76.73	145
>15,000	12.51	4.19	83.30	497	7.13	24.76	68.11	88

Transfer students were cross-classified by the size of their initial and destination colleges. The classification did not reveal any consistent transfer pattern. Students were not necessarily moving from large to small colleges or vice versa. Although the majority of 4→2 transfers moved to small colleges, this may simply indicate that 2-year colleges are generally small (see table 7-b).

Table 7-b.–Transfer students cross-classified by size of initial and destination colleges

Transfer category	Size of initial college (1972)	Size of destination college (1973)					N
		≤2,000	2,001-5,000	5,001-10,000	10,001-15,000	>15,000	
4→4	≤2,000	33.26%	13.29%	26.35%	14.24%	12.85%	83
	2,001 - 5,000	19.16	18.08	31.43	16.48	14.84	63
	5,001 - 10,000	25.72	17.11	33.60	17.08	6.49	53
	10,001 - 15,000	40.82	9.25	8.72	24.43	17.79	18
	>15,000	13.07	22.63	31.50	5.68	27.11	17
4→2	≤2,000	55.16	28.32	13.54	0.00	2.97	26
	2,001 - 5,000	48.34	41.84	0.00	9.82	0.00	13
	5,001 - 10,000	51.27	35.93	12.80	0.00	0.00	15
	10,001 - 15,000	--	--	--	--	--	--
	>15,000	--	--	--	--	--	--
2→2	≤2,000	57.92	17.97	0.00	5.97	18.13	20
	2,001 - 5,000	22.14	43.79	25.03	9.05	0.00	16
	5,001 - 10,000	0.00	28.56	66.97	0.00	4.47	13
	10,001 - 15,000	--	--	--	--	--	--
	>15,000	--	--	--	--	--	--
2→4	≤2,000	16.40	14.20	22.91	25.36	21.13	52
	2,001 - 5,000	22.60	17.71	16.78	26.19	16.72	22
	5,001 - 10,000	--	--	--	--	--	--
	10,001 - 15,000	--	--	--	--	--	--
	>15,000	--	--	--	--	--	--

NOTE.–Symbol -- indicates that the N's were too small for reliable estimates.

D. Summary and Discussion

The extent of college transfers was investigated by estimating the national proportion of college students in four transfer categories: (1) 4→4 transfers, (2) 4→2 transfers, (3) 2→2 transfers, and (4) 2→4 transfers. Differences among subgroups defined by background variables and institutional characteristics were also included.

The number of transfers from 4-year colleges was substantial. About 19 percent of 4-year college students transferred within 2 years after initial matriculation (see figure 3). Of those transfers, 84 percent moved to other 4-year colleges, and 16 percent transferred to 2-year colleges. Proportionally, there were as many 4→4 transfers in the first year as in the second year. Of the 4→2 transfers in the first, many might move back to a 4-year institution in the following year (see figures 1 and 2).

Transfers from the 2-year colleges were also substantial. About a quarter of the students transferred to a 4-year institution over a 2-year period. A majority of those students did so in their second year (see figures 2 and 3). The number of 2→2 transfers was least substantial among the four transfer groups.

The observed transfer rates were, in general, smaller than those found by other studies. It is possible that these estimates are smaller because many more students may transfer to or reenter colleges in subsequent years. A more accurate estimate of 2→4 transfers, for example, requires data covering a longer time span. The next NLS followup will be valuable in this respect.

The 4→2 transfers were somewhat unconventional. Although some of those students may eventually return to 4-year colleges, the large number of thos students, as shown by the NLS data and data from Illinois (Illinois Council on Articulation, 1970) and North Carolina (Davis & Balfour, 1973), point to the need for counseling services in college selection, and perhaps in curriculum programs. On the other hand, the phenomenon also suggests that 2-year colleges play an important role in higher education. They are a mobility channel for the lower SES student, the late bloomer academically, and the less college-degree-aspired student. In addition, many students may redirect their goals, as well as improve their academic standing, in 2-year colleges.

Differences among subgroups existed primarily in the 4→4 transfers and the 2→4 transfers (see tables 3-b and 4-b). Students of high SES or high ability were more likely to move from one 4-year college to another. In a similar manner, students of higher SES, aspiration, achievement, and/or ability had a greater 2→4 transfer rate than students of lower levels on these variables. A further investigation of the relationship between background variables and transfer rates is discussed in the following chapter.

To a large extent, the findings on the differences in transfer rates among the types of institutions were consistent with previous studies. Students from private institutions had a greater transfer rate than did students from public institutions. The difference in transfer rates between public and private institutions may be partially due to the selection of different kinds of students, as well as to different institutional environments. Four-year private institutions tend to be selective, and the resulting competitive pressure may lead some more motivated students to transfer to other institutions. Private institutions also tend to be more expensive. On the other hand, many public institutions are large State-controlled schools which are able to provide a greater variety of subcultures for students to identify with. As Kamens (1971) argued, larger institutions exert greater holding power over students by providing more diverse programs and social activities; a greater variety of opportunities leads students to greater commitment to the institution, which, in turn, results in less transferring from the institution. The NLS data only partially support the above arguments.

The relationship between college selectivity levels and transfer rates was not significant; transfer rates did not vary in a consistent manner across selectivity levels (see table 6). It is possible that the feeling of prestige in a highly selective institution may counterbalance the pressure of competition. However, when students in highly selective colleges transferred, a great proportion of them transferred to less selective institutions.

The differences among institutions of varying sizes, however, showed a consistent pattern; the larger the school, the smaller the 4→4 transfer rate. A larger school seemed to exert a greater holding power over students.

III. COMPARISONS BETWEEN TRANSFER AND NONTRANSFER STUDENTS

A question posed in this study is what are the characteristics of transfer students? In particular, are transfers different from nontransfers in certain background variables? Other studies have asked this same question (e.g., Slettedahl, 1972; Willingham & Findikyan, 1969; Van Alstyne, 1974; George et al., 1973); and it has been found, for example, that men are more likely than women to transfer from 2-year to 4-year institutions (Van Alstyne, 1974), students of high SES and high aspirations are more likely than students of low measures in these variables to transfer (Kintzer, 1973; Brinbaum, 1970), and majority students are more likely than minority students to transfer (Willingham, 1972). To a great extent, descriptive analysis in the preceding chapter has provided some supportive evidence. However, since many background characteristics are intercorrelated, an observed simple relationship between predictor and transfer behavior may disappear when other variables are controlled. In addition, studies did not include withdrawals and graduates (i.e., students who completed the 2-year program but discontinued further study) as comparison groups, and thus much information may have been lost. It is, therefore, the primary purpose of this chapter to further examine the differences in student characteristics between transfer and a more refined nontransfer group as well as the relationship of a background variable with transfer behavior when other variables are considered.

The college-going status of the students who initially enrolled in 4-year or 2-year institutions by October 1972 was examined again in October 1973 and 1974. This examination provided a basis for classifying the students into the following categories: persister, transfer, graduate, and withdrawal. Transfer groups have been specified in the previous chapter (see Table 2). Persisters are those students who remained in the same college from October 1972 to October 1974. Withdrawals were those students who were in school in October 1972 but were out of school by October 1974. Graduates were those 2-year college students who had completed a 2-year degree but did not continue their education in October 1974. The student categories are further listed below:

	Four-year institutions	Two-year institutions
Transfer	1. 4→4 transfer 2. 4→2 transfer	1. 2→2 transfer 2. 2→4 transfer
Nontransfer	3. Persister 4. Withdrawal	3. Persister 4. Withdrawal 5. Graduate

The comparisons between transfer and nontransfer students were made on the following background variables: socioeconomic status, sex, race, high school grades, aptitude test scores, educational aspiration, high school program, college grades, field of study, and region. These variables were also described in the previous chapters.

The primary purpose of this analysis was to compare a transfer group with a specific nontransfer group, rather than to test the overall differences among student groups. Thus, the analyses were the so-called planned comparisons on the selected groups, and the same error term (within-group variance) was used for all tests. The comparisons selected for the 4-year and 2-year college students are listed beow. It should be noted that the number of comparisons allowed for each set of analyses should not be greater than K-1, where K is the number of groups.

For the 4-year college students, the comparisons were:

1. Persisters vs. 4→4 transfers
2. Persisters + 4→4 transfers vs. 4→2 transfers
3. 4→2 transfers vs. withdrawals

For the 2-year college students, the comparisons were:

1. Persisters vs. 2→2 transfers
2. Persisters + 2→2 transfers vs. 2→4 transfers
3. 2→4 transfers vs. graduates
4. 2→4 transfers vs. withdrawals

Multivariate analyses of variance were performed separately for the 4-year and 2-year college students on 12 variables. The first step involved the computing of the weighted means and variance-covariance matrix, which were then used together with the actual sample n's as input data for analysis. (The requirements of the weighting process were described in chapter 1, section D.) Four sets of test statistics are presented for each comparison: the multivariate F-ratio for the overall group differences on the variables simultaneously; the univariate F-ratio for the significance of the individual variable; the step-down F-ratio for the test of an individual variable by holding prior variables constant; and discriminant functions for providing the maximum differentiation between groups. The standardized discriminant function coefficients have an interpretation analogous to that of beta weights in a regression analysis; that is, they not only indicate the relative partial contribution of a variable holding other variables constant, they also indicate the direction of the effect. It should be noted that, because of the unequal sizes of student groups (i.e., nonorthogonal design), each comparison of interest was placed in the last position to obtain unconfounded tests (see Bock, 1975; Finn, 1974).

A. Comparisons Between 4-Year College Transfers and Nontransfers

The weighted means and common standard deviations (i.e., pooled across groups) of the background variables are presented in table 8. Several variables were zero-one dichotomies for which the means are proportions of students having the related background characteristic. For example, the value of .47 in the first column of table 8 indicates that 47 percent of persisters were female students. All continuous variables such as SES and aptitude test scores were coded from low to high. The test statistics for the three comparisons are presented in tables 9-a, 9-b, and 9-c, and are discussed below.

Table 8.– Weighted means and standard deviations for various college-going status groups on background variables (4-year colleges)

Background variables[1]	Persisters	4→4 Transfers	4→2 Transfers	Withdrawals	Common standard deviation[2]
SES	.45	.52	.41	.24	.69
Female (vs. male)	.47	.57	.54	.49	.50
Black (vs. nonblack)	.06	.04	.05	.06	.23
Hispanic (vs. non-Hispanic)	.01	.01	.04	.01	.12
High school grades	6.65	6.65	6.30	6.13	1.15
Academic aptitude test scores	58.26	57.85	57.49	55.79	5.73
Educational aspiration	5.68	5.64	5.61	5.39	.62
Academic high school program (vs. general and voctech)	.84	.82	.82	.69	.39
College grades	5.79	5.93	5.04	5.09	1.32
Academic field of study (vs. nonacademic)	.95	.95	.92	.87	.25
South (vs. others)	.25	.24	.33	.29	.44
West (vs. others)	.14	.15	.28	.16	.35
N[3]	1948	547	98	653	3246

[1] SES is a composite score with a mean of 0 and standard deviation of 1. Aptitude test scores are standardized scores with mean of 50 and standard deviation of 10. High school and college grades were coded as follows: mostly A = 8; about half A and half B = 7; mostly B = 6; about half B and half C = 5; mostly C = 4; about half C and half D = 3; mostly D = 2; and mostly below D = 1. Education aspirations were coded as follows: less than high school = 1; high school = 2; some vocational studies beyond high school = 3; two-year college = 4; four-year college = 5; and graduate school = 6.

[2] The squares of these values are within-group means of squares (the error terms for univariate analysis).

[3] The differences in sample size in this analysis and previous analyses were due to missing data on background variables, primarily because of nonparticipation in the base-year survey.

1. 4→4 transfers and persisters were different with respect to their overall background (the multivariate F-ratio of 2.83 was significant at the .001 level with 12 and 3231 degrees of freedom, see table 9-a). The differences were particularly substantial in SES, sex, and college grades (see the univariate F-ratios for these variables in table 9-a). The differences on these variables still existed even when some prior variables were controlled (i.e., the stepdown F-ratios on these variables were still significant at the .05 level). After SES, sex, race, and high school grades were considered, persisters had significantly higher test scores than transfers.

The discriminant function coefficients show that the variables of SES, sex, aptitude test, and college grades carried greater weights than other variables in differentiating the persisters from 4→4 transfers. As indicated by the sign of the coefficients and statistics in table 8, the 4→4 transfer group was composed of more female students than the persister group. This indicates that more female than male students transferred among 4-year colleges, or male students were more likely than female students to remain in the same 4-year college. (Note: The proportion of female students in the initial 4-year college enrollment was .48, see table 1.) The 4→4 transfer students also tended to have higher scores on SES and college achievement than persisters after other variables were considered. The groups were about one-tenth of a standard deviation apart on both variables. However, it should be noted that 4→4 transfer students had lower aptitude test scores than persisters. It may be possible that the lower high school grades and aptitude test scores of those 4→4 transfer students prohibit them from getting into the kind of institution they like, and transferring becomes an alternative solution.

Table 9-a.--Test statistics for the comparison between persisters and 4→4 transfers

Variable	Univariate F[1] (d.f. = 1, 3242)	Stepdown F[2] (d.f. = 1, 3242)	Standardized discriminant coefficients[3]
SES	4.06*[4]	4.06*	0.44
Female (vs. male)	15.46**	16.29**	.66
Black (vs. nonblack)	1.18	.73	-.26
Hispanic (vs. non-Hispanic)	.00	.09	-.00
High school grades	.00	1.05	-.15
Academic aptitude test scores	2.17	5.02*	-.51
Educational aspiration	1.88	.70	-.14
Academic high school program (vs. general and voctech)	.43	.02	-.03
College grades	5.09*	5.78*	.47
Academic field of study (vs. academic)	.12	.03	.03
South (vs. others)	.22	.09	-.04
West (vs. others)	.29	.05	.04
	Multivariate F = 2.83 (d.f. = 12, 3231) p < .001		$X^2(12) = 33.81$ p < .001

NOTE.--1. Within-group variance is shown in table 8.

2. Variables are listed in the order in which the stepdown analysis was performed. Thus, the stepdown F shows the significance of the indicated dependent variable, controlling for all variables listed above it.

3. The sign of the discriminant function coefficients shows the direction of relationship. A positive sign indicates that transfers were higher on the dependent variables than were persisters.

4. *p < .05; **p < .01

2. Students who moved to 2-year colleges (i.e., 4→2 transfers) were different from those who remained in 4-year colleges (including 4→4 transfers) in their overall backgrounds. The multivariate F-ratio was significant (see table 9-b). The differences were particularly substantial in the variables of Hispanic versus non-Hispanic, high school grades, college grades, and West versus non-West. (The univariate F-ratios for these variables were significant at the .01 or .05 level with 1 and 3242 degrees of freedom.) Table 8 shows that the 4→2 transfers were composed of relatively more Hispanics and more students from the West than were persisters, and had substantially lower high school and college grades. The stepdown tests provided the same conclusion for these variables when some prior variables were controlled. In fact, as shown by the sign of the discriminant function coefficient (see table 9-b), the direction of lower grades and greater composition of Hispanic students and students from the West still held when all other variables were considered. In addition, college grades carried the largest weight in differentiating 4→2 transfer students from those who remained in a 4-year college. It seems that a poor grade-point average was a major factor leading those students to transfer to 2-year colleges.

Table 9-b.--Test statistics for the comparison between 4→2 transfers and students who remained in 4-year colleges (i.e., persisters and 4→4 transfers)

Variable	Univariate F[1] (d.f. = 1, 3242)	Stepdown F[2] (d.f. = 1, 3242)	Standardized discriminant function coefficients[3]
SES	1.14	1.14	-.15
Female (vs. male)	.09	.06	.19
Black (vs. nonblack)	.00	.06	-.08
Hispanic (vs. non-Hispanic)	4.58**	3.96*	.19
High school grades	9.03**	9.80**	-.26
Academic aptitude test scores	.89	.84	.30
Education aspiration	.77	.17	-.06
Academic high school program (vs. general and voctech)	.07	.06	.15
College grades	35.27**	28.60**	-.73
Academic field of study (vs. nonacademic)	1.28	1.36	-.14
South (vs. others)	3.39	3.09	.38
West (vs. others)	13.51**	21.86**	.59
	Multivariate F = 5.97 (d.f. = 12, 3231) p < .001		$X^2_{(12)} = 70.81$ p < .001

NOTE.--1. Within-group variance is shown in table 8.

2. Variables are listed in the order in which the stepdown analysis was performed. Thus, the stepdown F shows the significance of the indicated dependent variable, controlling for all variables listed above it.

3. The sign of the discriminant function coefficients shows the direction of relationship. A positive sign indicates that transfers were higher on the dependent variables than were students who remained in 4-year colleges.

4. *p < .05; **p < .01

3. The third comparison focused on the differences between those who withdrew and those who transferred to 2-year colleges (i.e., 4→2 transfers). As shown in tables 8 and 9-c, these two groups of students were distinctively different in their background characteristics. In particular, the 4→2 transfer students were more likely than withdrawals to have high SES scores, to include more Hispanic and students from the West, and to have higher aptitude test scores and high educational aspiration. Even after some prior variables (stepdown analysis were considered, the differences between the two groups of students on these variables (except high school program) were still significant.

Discriminant analysis supported the above findings even after all other variables were considered. However, as shown by the sign of the discriminant function coefficient, 4→2 transfers tended to have lower college grades than withdrawals. The data seemed to suggest that 4→2 transfers aspired more to obtain a college education than did withdrawals; thus, they enrolled in a 2-year college if their performance was too poor to continue in a 4-year college.

Table 9-c.–Test statistics for the comparison between 4→2 transfers and withdrawals

Variable	Univariate F[1] (d.f. = 1, 3242)	Stepdown F[2] (d.f. = 1, 3242)	Standardized discriminant function coefficients[3]
SES	4.82*[4]	4.82*	0.23
Female (vs. male)	.87	1.09	.25
Black (vs. nonblack)	.05	.06	.14
Hispanic (vs. non-Hispanic)	4.24*	5.96*	.33
High school grades	1.71	1.30	-.05
Academic aptitude test scores	7.54*	6.28*	.39
Educational aspiration	10.54**	6.43*	.33
Academic high school program (vs. general and voctech)	8.82*	3.30	.37
College grades	.11	2.47	-.27
Academic field of study (vs. nonacademic)	3.61	1.50	.19
South (vs. others)	.62	.66	.27
West (vs. others)	8.72**	12.01**	.54
	Multivariate F = 3.85 (d.f. = 12, 3231) $p < .001$		$X^2_{(12)} = 45.82$ $p < .001$

NOTE.–1. Within group variance is shown in table 8.

2. Variables are listed in the order in which the stepdown analysis was performed. Thus, the stepdown F shows the significance of the indicated dependent variable, controlling for all variables listed above it.

3. The sign of the discriminant function coefficients shows the direction of relationship. A positive sign indicates that transfers were higher on the dependent variables than were withdrawals.

4. *$p < .05$; **$p < .01$

B. Comparisons Between 2-Year College Transfers and Nontransfers

The same techniques used in the comparisons of the 4-year college students were employed for the analyses of the 2-year college students. The weighted means and the pooled standard deviations on the selected background variables are presented in table 10, and the test statistics for group comparisons are included in tables 11-a to 11-d. The results were quite different from those of the 4-year college transfer and nontransfer comparisons.

Table 10.–Weighted means and standard deviations for various college-going groups on background variables (2-year colleges)

Background variables[1]	Persisters	2→2 Transfers	2→4 Transfers	Completion	Withdrawals	Common standard deviation[2]
SES	0.10	0.14	0.29	0.05	0.12	0.62
Female (vs. male)	.43	.40	.45	.62	.52	.50
Black (vs. nonblack)	.03	.04	.03	.03	.04	.17
Hispanic (vs. non-Hispanic)	.06	.09	.01	.02	.05	.19
High school grades	5.61	5.37	6.11	6.05	5.41	1.22
Academic aptitude test scores	53.35	51.55	55.02	54.31	52.38	6.20
Educational aspiration	5.04	5.20	5.38	4.57	4.76	.95
Academic high school program (vs. general and voctech)	.54	.57	.67	.58	.42	.49
College grades	5.40	5.21	6.02	5.92	5.31	1.31
Academic field of study (vs. nonacademic)	.76	.68	.89	.51	.60	.44
South (vs. others)	.19	.21	.29	.19	.22	.42
West (vs. others)	.43	.32	.24	.23	.31	.45
N[3]	253	51	360	175	452	1291

[1] SES is a composite score with mean of 0, and standard deviation of 1. Aptitude test scores are standardized scores with mean of 50 and standard deivation of 10. High school and college grades were coded as follows: mostly A = 8; about half A and half B = 7; mostly B = 6; about half B and half C = 5; mostly C = 4; about half C and half D = 3; mostly D = 2; and mostly below D = 1. Educational aspirations were coded as follows: less than high school = 1; high school = 2; some vocational studies beyond high school = 3; two-year college = 4; four-year college = 5; and graduate school = 6.

[2] The squares of these values are within-group means of squares (the error terms for univariate analysis).

[3] The differences in sample size in this analysis and previous analyses were due to missing data on background variables primarily because of nonparticipating in the base-year survey.

1. There were no differences in background variables between persisters and 2→2 transfers. The multivariate F-ratio of 1.07 was not significant at the .01 level (see table 11-a). The univariate F-ratios also failed to reveal any significant differences, and no significant discriminant function was obtained. Thus, it was concluded that, at least on the selected variables in this study, those students who remain in a 2-year college and those who transfer to another 2-year college are not significantly different in their background variables.

Table 11-a.–Test statistics for the comparison between persisters and 2→2 transfers

Variable	Univariate F[1] (d.f. = 1, 1286)	Stepdown F[2] (d.f. = 1, 1286)	Standardized discriminant function coefficients[3]
SES	0.24	0.24	0.27
Female (vs. male)	.09	.08	.00
Black (vs. nonblack)	.06	.12	.03
Hispanic (vs. non-Hispanic)	.71	.94	.29
High school grades	1.61	.138	-.09
Academic aptitude test scores	3.55	2.07	-.54
Educational aspiration	1.18	1.84	.45
Academic high school program (vs. general and voctech)	.16	.70	.22
College grades	.95	.05	-.08
Academic field of study (vs. nonacademic)	1.37	2.14	-.45
South (vs. others)	.10	.17	-.09
West (vs. others)	2.73	3.04	-.55
	Multivariate F = 1.07 (d.f. = 12, 1275) p < .38		$X^2_{(12)} = 12.76$ p < .39

NOTE.–1. Within-group variance is shown in table 10.

2. Variables are listed in the order in which the stepdown analysis was performed. Thus, the stepdown F shows the significance of the indicated dependent variable, controlling for all variables listed above it.

3. The sign of the discriminant function coefficients shows the direction of relationship. A positive sign indicates that transfers were higher on the dependent variables than were persisters.

2. Students who moved to the 4-year colleges were, however, different from those who remained in the 2-year colleges (see table 11-b). The differences were significant on almost every individual variable except sex and black-versus-nonblack (the univariate F-ratios for those two variables were not significant at the .05 level). It can be seen from table 10 that 2→4 transfers had a higher SES level, were composed of fewer Hispanics, had higher high school and college grades, and were more likely to major in academic fields than were those who remained in the 2-year college. The percentage of students in the West who persisted in 2-year colleges was greater than the percentage of those who transferred to 4-year colleges. The opposite pattern held true for the South.

Some of these differences, however, became insignificant when some prior variables were held constant. As shown by the stepdown statistics, 2→4 transfers and persisters were similar in aptitude, aspiration, and high school program when SES, sex, and race were considered. The higher discriminant weights on high school and college grades and academic field seem to indicate that 2→4 transfers may be a result of higher academic qualifications.

Table 11-b.–Test statistics for the comparison between 2→4 transfers and students who remained in 2-year colleges (i.e., persisters and 2→2 transfers)

Variable	Univariate F[1] (d.f. = 1, 1286)	Stepdown F[2] (d.f. = 1, 1286)	Standardized discriminant function coefficients[3]
SES	9.29**	9.29**	.26
Female (vs. male)	.66	.90	-.02
Black (vs. nonblack)	.38	.03	.01
Hispanic (vs. non-Hispanic)	12.84**	9.46**	-.24
High school grades	29.34**	31.20**	.37
Academic aptitude test scores	19.71**	2.28	.03
Educational Aspiration	8.92**	3.60	.14
Academic high school program (vs. general and voctech)	6.81*	.82	.02
College grades	34.57**	12.52**	.48
Academic field of study (vs. nonacademic)	16.99**	10.00**	.33
South (vs. others)	5.77*	4.67*	.12
West (vs. others)	10.48**	7.08*	-.32
	Multivariate F = 7.85 (d.f. = 12, 1275) p < .001		$X^2_{(12)} = 91.23$ p < .001

NOTE.–1. Within-group variance is shown in table 10.

2. Variables are listed in the order in which the stepdown analysis was performed. Thus, the stepdown F shows the significance of the indicated dependent variable, controlling for all variables listed above it.

3. The sign of the discriminant function coefficients shows the direction of relationship. A positive sign indicates that transfers were higher on the dependent variables than were students who remained in the 2-year college.

4. *p < .05; **p < .01

3. The 2→4 transfers were also different from withdrawals and graduates (i.e., students who completed a 2-year program but discontinued further study) in their background characteristics. The differences are shown in tables 11-c and 11-d. In particular, the 2→4 transfers were higher than withdrawals in SES, academic achievement, educational aspiration, and field of study.

The comparisons between 2→4 transfers and graduates revealed some interesting information. Graduates were more likely than 2→4 transfers to be female students, and they scored lower on SES and educational aspirations (see table 11-d). However, there were no significant differences in ability and achievement scores between graduates and 2→4 transfers. The greater proportion of graduates in nonacademic programs seems to indicate that most graduates considered the 2-year college education as their educational goal. This group of 2-year graduates contained more female and lower SES students than did the 2→4 transfer group.

Table 11-c.--Test statistics for the comparison between 2→4 transfers and withdrawals

Variable	Univariate F[1] (d.f. = 1, 1286)	Stepdown F[2] (d.f. = 1, 1286)	Standardized discriminant function coefficients[3]
SES	16.05***	16.05**	0.16
Female (vs. male)	3.44	2.76	-.17
Black (vs. nonblack)	1.23	.16	.00
Hispanic (vs. non-Hispanic)	6.93*	3.89	-.09
High school grades	64.65**	81.22**	.37
Academic aptitude test scores	36.22**	3.07	-.11
Educational aspiration	85.99**	52.46**	.37
Academic high school program (vs. general and voctech)	53.14**	18.54**	.24
College grades	59.23**	19.12**	.38
Academic field of study (vs. nonacademic)	88.12**	37.89**	.42
South (vs. others)	6.26*	3.82	.10
West (vs. others)	5.42*	1.81	-.10
	Multivariate F = 21.54 (d.f. = 12, 1275) p < .001		$X^2_{(12)} = 236.24$ p < .001

NOTE.--1. Within-group variance is shown in table 10.
2. Variables are listed in the order in which the stepdown analysis was performed. Thus, the stepdown F shows the significance of the indicated dependent variable, controlling for all variables listed above it.
3. The sign of the discriminant function coefficients shows the direction of relationship. A positive sign indicates that transfers were higher on the dependent variables than were withdrawals.
4. *p < .05; **p < .01

Table 11-d.--Test statistics for the comparison between 2→4 transfers and graduates

Variable	Univariate F[1] (d.f. = 1, 1286)	Stepdown F[2] (d.f. = 1, 1286)	Standardized discriminant function coefficients[3]
SES	18.32***	18.32**	0.23
Female (vs. male)	12.48**	11.92**	-.19
Black (vs. nonblack)	.00	.76	.03
Hispanic (vs. non-Hispanic)	.02	.46	.03
High school grades	.22	3.29	-.01
Academic aptitude test scores	1.54	.07	-.12
Educational aspiration	86.56**	69.40**	.55
Academic high school program (vs. general and voctech)	4.32*	.19	.02
College grades	.69	1.22	.16
Academic field of study (vs. nonacademic)	91.66**	47.50**	.58
South (vs. others)	7.69*	3.99	.21
West (vs. others)	.01	1.30	.11
	Multivariate F = 13.73 (d.f. = 12, 1275) p < .001		$X^2_{(12)} = 155.52$ p < .001

NOTE.--1. Within-group variance is shown in table 10.
2. Variables are listed in the order in which the stepdown analysis was performed. Thus, the stepdown F shows the significance of the indicated dependent variable, controlling for all variables listed above it.
3. The sign of the discriminant function coefficients shows the direction of relationship. A positive sign indicates that transfers were higher on dependent variables than were graduates.
4. *p < .05; **p < .01

C. Summary and Discussion

Transfer students were, in general, different from nontransfer students. In 4-year institutions, 4→4 transfers tended to have higher levels on SES and college achievement but lower aptitude, and tended to include more female students than did persisters. This seems to suggest that those students moving among the 4-year colleges were students who had the qualifications for greater mobility—high SES background which reduces financial pressure, and high achievement which would be accepted by other colleges. However, why there were more female than male 4→4 transfers is unknown. It might be that female students have more difficulty than do males in finding a suitable opportunity for career development or a satisfactory social life on campus.

Transferring to a 2-year college after 2 years of study in a 4-year college was an unexpected phenomenon. The generally lower grades of those 4→2 transfers may indicate that they may have had academic difficulties in the 4-year institutions. However, the data showed that the 4→2 transfers had high educational aspiration; perhaps they intended to improve their achievement in a 2-year college and then return to a 4-year college, (e.g., Kuznik, 1972) or at least get a 2-year college degree that might be helpful in career development. The future NLS survey will provide data for testing this assumption. The 4→2 transfers' higher SES background and higher aspiration were probably the underlying factors that contributed to their desire to continue their education rather than to withdraw entirely.

In 2-year colleges, 2→2 transfers were not significantly different from persisters. However, 2→4 transfers were a distinctive group among the 2-year college students; they had higher scores on SES and achivement, and they were more likely to major in the field of academic studies than were other groups of students. A number of reasons might explain why these students transferred to a 4-year school. Many of the 2→4 transfers no doubt were students who aspired to a 4-year college education, but such reasons as inadequate preparation in high school or inadequate academic qualifications led them to enroll in a 2-year college initially. There might be some financial considerations involved since 2-year colleges are generally less expensive than 4-year colleges. There might also be some decision problems. Many students may not know what they want to study or what they want to do in the future; thus, they simply use a 2-year college as a way station until their goals are set. The comparisons between this group of students and students enrolled in the 4-year college immediately after high school graduation will be informative. Some comparisons are included in the next chapter.

IV. COMPARISONS BETWEEN 2—4 TRANSFERS AND 4-YEAR COLLEGE NATIVE STUDENTS

Going to a 2-year college initially and then transferring to a 4-year college, rather than enrolling in a 4-year college immediately after high school, is considered by many students as a satisfactory program of higher education. A recent study by the Carnegie Commission of Higher Education (1970) revealed that over two-thirds of the students entering 2-year colleges intended to transfer to 4-year colleges. The NLS data, as presented in chapter II, showed that about a quarter of the 2-year college students did transfer to 4-year colleges within two years. Therefore, it is informative to examine the characteristics of the students taking these two alternate paths, and to compare them as to financial aid status, academic performance, and satisfaction with education.

A. Comparisons on Background Variables and Individual Characteristics

The first question addressed is whether the choice of different college-going paths is related to the students' backgrounds and/or certain personal characteristics. To answer this question, the 2→4 transfers and 4-year college-native students[1] were compared on the following variables:

(1) Background characteristics: sex, race, and socioeconomic background;
(2) Region where the student graduated;
(3) High school programs;
(4) Academic performance: high school grades, aptitude test scores;
(5) Educational aspiration;
(6) Self-concept and locus of control;
(7) Life goals: work, community, and family-oriented life goals.

The variables of self-concept, locus of control, and life goals were psychometrically-constructed scales, measured when the students were seniors in high school. They were included on the assumption that they might influence an individual's choice of different educational or career paths. The scale definitions are presented in appendix D. Both self-concept and locus of control were measured on a 5-point scale. A high score on locus of control indicated a high degree of internality; a low score, a high degree of externality. A high score on self-concept indicated positive self-concept. Life goals were composites based upon items with a 3-point scale, ranging from not important (1), to very important (3). Other selected variables, such as SES and educational aspiration, were specified in the preceding chapter; the same definitions were applicable to the analysis in this chapter.

The weighted means of common standard deviations on the selected variables are presented in table 12. The test statistics (F-ratios) of the group differences are included in table 13. As expected, these two groups of students differed in their backgrounds and characteristics. (The multivariate F-ratio of 19.00 is significant at the .001 level with degrees of freedom of 15 and 2792). The univariate F-ratios in table 13 show that native and transfer students in 4-year colleges differed significantly on most of the selected variables. Native students tended to have higher SES scores, high school grades, aptitude tests, and educational aspiration than did transfer students. This finding was consistent with previous findings (e.g., Kintzer, 1973; Brinbaum, 1970). Native students were more likely than were transfer students to have been graduated from high-school academic programs, to have higher self-concepts, and to be more internal in locus of control. On the other hand, transfer students had higher scores on work-oriented life goals than native students, and were composed of proportionally more nonblack students. In addition, there were proportionally more transfers than native students in the West than in other regions.

[1] Native students were those students who attended 4-year colleges immediately after high school graduation and who, after two years, persisted in 4-year colleges or who transferred to other 4-year colleges.

Table 12.–Weighted means and common standard deviations of the selected variables for native and 2→4 transfer students

Variable	Means		Common standard deviation
	Native	Transfer	
1. SES	0.47	0.29	0.69
2. Female (vs. male)	.49	.45	.50
3. Black (vs. nonblack)	.05	.03	.22
4. Hispanic (vs. non-Hispanic)	.01	.01	.12
5. High school grades	6.66	6.11	1.14
6. Aptitude test	58.06	54.80	5.66
7. Educational aspiration	5.68	5.39	.56
8. Academic high school program (vs. nonacademic)	.84	.68	.38
9. Self-esteem	4.02	3.91	.64
10. Locus of control	4.07	3.96	.59
11. Work life goals	2.47	2.53	.37
12. Community life goals	2.10	2.14	.47
13. Family life goals	.94	.98	.40
14. South (vs. non-South)	.25	.29	.44
15. West (vs. non-West)	.13	.24	.34
N	2,451	357	–

Table 13.–Test statistics for the differences between native students and 2→4 transfers on the selected variables

Variable	Univariate F[1] (d.f. = 1, 2806)	Stepdown F[2] (d.f. = 1, 2806)	Standardized discriminant function coefficients[3]
1. SES	20.98**[4]	20.98**	0.24
2. Female (vs. male)	1.90	2.38	.05
3. Black (vs. nonblack)	5.14	10.25**	.39
4. Hispanic (vs. non-Hispanic)	.01	1.16	.17
5. High school grades	72.11**	77.18**	.32
6. Aptitude test	102.80**	55.88**	.36
7. Educational aspiration	86.49**	36.82**	.37
8. Academic high school program (vs. nonacademic)	55.29**	16.56**	.20
9. Self-esteem	9.33**	.28	-.06
10. Locus of control	11.82**	.01	.00
11. Work life goal	7.65*	1.86	-.07
12. Community life goal	1.72	.73	-.05
13. Family life goal	4.25*	.74	-.04
14. South (vs. non-South)	3.51	3.73	-.24
15. West (vs. non-West)	33.99**	46.06**	-.44
	Multivariate F = 19.00 d.f. = 15, 2792 $p < .001$		$X^2_{(15)} = 272.12$ $p < .001$

NOTE.–1. Within-group variance is shown in table 12.

2. Variables are listed in the order in which the stepdown analysis was performed. Thus, the stepdown F shows the significance of the indicated dependent variable, controlling for all variables listed above it.

3. The sign of the discriminant function coefficients shows the direction of relationship. A positive sign indicates that native students were higher on the dependent variables than were 2→4 transfers.

4. *$p < .05$; **$p < .01$

Because the selected variables are, in general, correlated with each other, the difference between native and transfer students on a certain variable may be confounded by other variables. To explore further the differences between these two groups of students, the selected variables were ordered for a stepdown analysis of variance which indicates the statistical significance of the group differences on a variable, holding prior variables constant. The stepdown F-ratios in table 13 indicate that the findings from the univariate F tests (except those relating to self-esteem, locus of control, and life goals) still held. That is, native students had higher scores on SES, high school grades, aptitude tests, and educational aspirations than did transfer students, after controlling for prior variables; also, transfer students were composed more of nonblack students and students from the West than were native students.

The relative importance of individual variables in differentiating native and transfer students can be measured by the standardized discriminant function is linear combination that gives maximum discrimination between groups. The coefficients are compatible with multiple regression coefficients; they not only indicate the relative partial contribution of a variable holding other variables constant, they also indicate the direction of the effect. Based on these coefficients as shown in table 13, those variables that were significant in the stepdown analysis carried greater weights in differentiating the two grpups of students.

In summary, it is concluded that native students were different from 2→4 transfers. Native students appeared to come from higher SES families and to have higher scores on ability, academic achievement, and aspiration. This finding is consistent with that of Holmstrom and Bisconti (1974). Native students probably planned to go to 4-year colleges early in high school, since they were graduated from high school college-preparatory programs in much larger proportions than transfer students. The high proportion of transfer students in the West may be a result of the fact that there are more 2-year colleges in te West, and thus a greater proportion of students selected that path for obtaining higher education. Fewer blacks in the transfer group than in the native group may indicate either that more blacks took 2-year college education as their final education level or that fewer blacks entered 2-year colleges at the beginning. The NLS data seemed to support the second argument because proportionally there were more blacks in 4-year colleges than in 2-year colleges in the fall of 1972 (see table 1).

B. Comparisons on Financial Aid Status

Previous studies have shown that in 1969 only 20 percent of the 4-year institutions had specific aid programs for transfer students and that, while one-third of all new freshmen received aid, only 14 percent of the transfer students had financial assistance (Willingham & Findikyan, 1969). This problem, however, may have been lessened, since federal finanical aid programs were restructured in 1972. To test this assumption, native and 2→4 transfer students were compared on financial aid status as of October 1974. It should be noted that this analysis, as well as the following ones on academic performance and college satisfaction, used only the 2→4 transfers who had transferred by the end of their freshman year because these variables measured conditions after the transfer.

Percentages of students receiving any kind of scholarship, fellowship, or grant are presented in table 14-a by SES and type of student. It can be seen that a higher percentage of native students received scholarships than did transfer students at each SES level. This was further tested by log-linear model analysis (see Bock, 1975). The results show that a model composed of constant, SES, and type-of-student effects sufficiently fits the data (see table 14-b); that is, the residuals that could not be estimated by this main-effect model were negligible ($X^2(2) = 2.43$, $p>.29$). There were no SES by type-of-student interactions; the differences between native and transfer students on financial aid status were consistent across SES levels.

The same techniques were applied to the analysis of the difference between native and transfer students who received loans as opposed to scholarships. The results are presented in tables 15-a and 15-b. There was no difference between the two groups. The tests of fitness of a model (see table 15-b) showed that the type-of-student effect was not needed in a model to fit the data, indicating that there was no association between receiving a loan and the classification of native or transfer.

Table 14-a.--Percentage of native and transfer students who received various kinds of scholarships, fellowships, or grants

SES	Type of student	Percentage receiving fellowships or grants	N
Low:	Native	72.08	474
	Transfer	44.11	14
Middle:	Native	45.92	1,479
	Transfer	18.09	61
High:	Native	24.07	1,760
	Transfer	14.79	60

NOTE.-- Transfers were those students who moved from the 2-year to the 4-year institution during or at the end of their first year in college.

Table 14-b.--Tests of fit for the logistic model

Model	Pearsonian residual chi-square	d.f.	p
1. Constant + SES	26.96	3	<0.001
2. Constant + SES + type of student	2.43	2	>0.29

Table 15-a.--Percentage of native and transfer students who received various kinds of loans

SES	Type of student	Percentage receiving loans	N
Low:	Native	45.59	474
	Transfer	27.46	14
Middle:	Native	28.96	1,479
	Transfer	29.57	61
High:	Native	13.58	1,760
	Transfer	13.19	60

NOTE.-- Transfers were those students who moved from the 2-year to the 4-year institution during or at the end of their first year in college.

Table 15-b.--Tests of fit for the logistic model for the association of SES, types of students, and receipt of loans

Model	Pearsonian residual chi-square	d.f.	p
1. Constant + SES	1.28	3	>.73
2. Constant + SES + type of student	1.13	2	>.56

While the preceding analyses used gross classifications of scholarships or loans, the following anlayses attempted to identify how the specific types of financial aid programs were related to the two groups of students. The percentages of native and transfer students receiving each type of financial aid are presented in tables 16 and 17. It appears that the most substantial difference was that a much greater proportion of native students than transfers received college-funded scholarships, grants, or state scholarships. This is probably because these scholarships were based on achievement as a primary criterion and native students had higher scores in achievement than did transfer students. As to student loans, proportionally more transfer students than native students received Federal Guaranteed Student Loans, and more native students received National Defense (Direct) Student Loans. It should be noted, however, that thost tabulations were not cross-classified by SES because of the small number of transfer students.

Table 16.–Percentage of students who reported receiving various kinds of scholarships, fellowships, or grants

Scholarship, fellowship, grant	Type of students	
	% Native	% Transfer
1. Basic educational opportunity grant	5.78	2.94
2. Supplemental educational opportunity grant	3.99	1.89
3. College scholarship or grant from college funds	16.97	4.98**
4. ROTC scholarship or stipend	1.00	.56
5. Nursing Scholarship Program	.48	.00**
6. Social security benefits (for students 18-22 who are children of disabled or deceased parents)	3.11	4.88
7. Veterans' Administration War Orphans or Survivors Benefits Program	1.33	3.09
8. Veterans' Administration Direct Benefits (GI Bill)	.25	1.45
9. State scholarship	12.99	6.06**
10. Other scholarship or grant	.53	.00**
Sample N	3,717	135

** p<.01 (a two-tailed test)

Table 17.– Percentage of students who reported receiving various kinds of loans

Loan	4-year college students	
	% Native	% Transfer
1. Federal Guaranteed Student Loan	5.21	12.01*
2. State loan	2.34	.40**
3. Regular bank loan	2.49	3.75
4. National Defense (Direct) Student Loan	11.31	5.89*
5. Nursing student loan	.51	.00**
6. School or college loan	1.58	.56
7. Relatives or friends	.99	2.00
8. Other loan	.16	.00**
Sample N	3,717	135

** p<.01; * p<.05 (a two-tailed test)

C. Comparisons on Academic Performance

Previous studies have found that 2→4 transfer students do not perform as well as native students in their first year in the new college, probably because of some adjustment problems (e.g., Anderson & Riehl, 1971; Hodgson & Dickerson, 1974). The NLS data support these findings. As shown in table 18, relatively more native students than first-year 2→4 transfers reported a grade-point average equal to or above B+ (about half A and half B) by October 1974 ($p<.05$).

Studies have shown that transfer students improved their achievement in later years (e.g., Hartmann & Cople, 1969; Knoell, 1965; Snyder & Blocker, 1970). The future NLS data would be useful in studying this effect.

Table 18.–Distributions of the student self-reported college grade-point averages

Grade-point	Type of student	
	% Native	% Transfer
1. Mostly A	12.65	7.78
2. About half A and half B	22.69	16.55
3. Mostly B	28.06	32.04
4. About half B and half C	24.37	29.44
5. Mostly C	10.82	12.87
6. About half C and half D	1.34	.96
7. Mostly D or below	.07	.36
Sample N	3,717	135

NOTE.– Transfers only applied to those students who transferred during or at the end of their first year in college.

D. Comparisons on the Evaluation of College Education

Students were asked to evaluate various aspects of college education on a 5-point scale, ranging from very satisfied to very dissatisfied, in the NLS second followup survey. The percentages of natives and 2→4 transfers expressing dissatisfaction with each aspect of college education are presented in table 19. A general pattern was that a greater proportion of native students than transfer students expressed dissatisfaction with almost all aspects of college education. The exceptions were that transfer students were more dissatisfied with counseling or job placement and with development of work skills. However, none of the differences was significant at the .01 level, indicating that the differences may be largely due to chance. In addition, it is noteworthy that the majority of students, both transfer and native students, did not indicate dissatisfaction with various aspects of college. When the next NLS followup data are available, it would be informative to examine if the widespread satisfaction with college still persists at the time when those students are graduating.

Table 19.–Percentage of students who indicated dissatisfaction with various aspects of college education

Aspects of educational life	Type of student	
	% Native	% Transfer
1. Qualities of most teachers	9.94	6.77
2. Social life	16.50	13.24
3. Development of work skills	11.65	12.86
4. Intellectual growth	6.65	5.43
5. Counseling or job placement	19.93	26.46
6. Buildings, library, equipment	12.84	11.48
7. Cultural activities	11.02	6.12
8. Intellectual life of the school	11.99	9.81
9. Course curriculum	17.32	11.46
Sample N	3,717	135

** $p<.01$; * $p<.05$ (a two-tailed test)

E. Summary and Discussion

Several comparisons were made between the 4-year native students and 2→4 transfer students. In general, transfer students tended to come from lower SES families and to have lower ability, achievement, and aspiration levels than the native students. It is possible that many of those transfer students might not have had adequate preparation in high school for a 4-year college education immedately after high school graduation. The 2-year institutions, which generally accept students of lower achievement, provide opportunities for those students to improve their academic ability and perhaps to focus on future goals. Also, many low-SES students may have attended 2-year colleges to reduce the cost of education.

The 2→4 transfer students were less likely than 4-year college native students to receive scholarships, fellowships, or grants. This might be due to the fact that many of these financial aid programs were based on academic performance. Since 2→4 transfer students in general were lower in achievement, they had less chance of obtaining financial aid. However, financial disadvantages may cause lower achievement. Perhaps some financial aid programs should be specified for 2→4 transfer students rather than leaving transfer students to compete with native students on an equal basis (Van Dusen, 1974).

The 2→4 transfer students showed lower achievement in the year after transfer than did native students. Many studies have argued that this is because of adjustment to a new college environment, as well as to different academic standards (e.g., Snyder & Blocker, 1970). These studies have indicated that transfer students would improve their achievement in the second year. The future NLS data will be useful in verifying these findings. However, it should be noted that the 2→4 transfer students in general have lower scores on aptitude tests and in high school achievement, and they would thus be expected to have lower academic achievement in college than would native students.

Transfer students did not express a greater dissatisfaction with college education than did native students. The only aspect with which more than a quarter of the transfer students expressed dissatisfaction was counseling or job placement. This, along with the fact that these students had transferred, indicates that there may be a need for better counseling and guidance services (see Knoell & Medsker, 1965).

V. STUDENTS' SELF-REPORTED REASONS FOR CHANGING SCHOOLS

One question posed in this study is why some students transfer from one college to another. Are there any personal or social factors that are related to certain transfer decisions? Answers to these questions may help to gain a better understanding of the transfer phenomenon, and may also provide some basis for developing programs to assist transfers.

In the first and second followup surveys, students enrolled in different schools over a period of time were asked to give reasons for changing schools. Their responses to these questions were tabulated for each transfer group and are presented in this chapter. It has been noted that to accept *post hoc* explanations provided by students for transferring may be a questionable practice because of the complexity of the transfer phenomenon and the natural tendency for persons to rationalize behavior which might be regarded by others as evidence of failure. However, data of this sort are useful in ***suggesting*** some of the antecedent factors that may prompt students to transfer.

Many students transfer from one college to another during or at the end of their first year in college, while many others do so in their second year in college. These two groups of transfers were labeled respectively as "freshman transfer" and "sophomore transfer." The latter group included some freshmen who moved again in their second year in college.

Transfer students were asked to give their reasons for changing schools in the first and second followup surveys. Tabulations of these reasons for freshman and sophomore transfers are presented in tables 20 and 21, respectively. It should be noted that reasons listed in the first and second followups were not exactly the same, and thus comparisons between freshman and sophomore transfers may not be appropriate.

There were differences among transfer groups in their major reasons for transferring. For example, while financial concern ("to attend a less expensive school") was indicated as a reason by about 45 percent of freshman 4→2 transfers, it was reported by only about 5 percent of the 2→4 transfers. The major reasons for changing schools are discussed separately for each of the four transfer categories.

Table 20.–Reasons freshman transfers gave for changing schools

Reasons	Transfer categories (percent)			
	4→2	4→4	2→4	2→2
A. Interest changed; former school did not offer the course I wanted	26.09	35.29	45.57	39.68
B. To attend less expensive school	45.06	28.81	5.06	18.60
C. Grades too low to continue	23.83	2.18	0.00	1.56
D. To be at a smaller school	23.50	15.67	5.91	4.69
E. To be at a larger school	6.77	23.02	44.54	6.30
F. To attend school closer to home	38.34	33.39	8.86	37.21
G. To attend school farther from home	4.78	15.34	33.61	17.33
H. To attend a school that would give one better career opportunities	28.35	51.16	75.32	50.00
I. To attend school where I felt more like I belonged	34.63	31.57	30.20	28.35
J. To attend school where I could maximize my intellectual and personal development	25.90	48.82	60.58	28.13
K. More group or social activities of interest	14.56	41.51	42.53	17.33
Sample size	179	478	177	110

NOTE.--1. Freshman transfers were students who moved between colleges during or at the end of their first year in college.

2. The percentages in each column add to more than 100 percent because transfers were allowed to check more than one reason for transferring.

Table 21.–Reasons sophomore transfers gave for changing schools

Reasons	Transfer categories (percent)			
	4→2	4→4	2→4	2→2
A. Interest changed; former school did not offer the course I wanted	34.76	35.69	10.84	45.18
B. To attend less expensive school	41.60	23.38	1.66	24.89
C. Grades too low to continue	20.84	3.53	0.43	10.49
D. To be at a smaller school	29.05	10.85	2.14	5.19
E. To be at a larger school	4.66	23.04	18.25	6.72
F. To attend school closer to home	32.52	23.99	5.14	44.36
G. To attend school farther from home	13.14	15.91	16.89	13.16
H. To attend a school that would give one better career oportunities	36.73	44.98	37.07	38.74
I. To attend a more prestigious school	11.13	22.77	17.95	5.41
J. To attend school where I could maximize my intellectual and personal development	20.81	51.05	33.92	30.36
K. More group or social activities of interest	12.50	26.26	17.56	6.50
L. To continue my education	0.55	7.81	91.82	3.17
Sample size	85	490	587	49

NOTE.–1. Sophomore transfers were students who moved between colleges during or at the end of their second year in college.
2. The percentages in each column add to more than 100 percent because transfers were allowed to check more than one reason for transferring.

A. Reasons Given by 4→2 Transfers

A relatively new phenomenon in student transferring is students who move from 4-year colleges to 2-year colleges. As discussed in the previous chapter, 2-year colleges received as many transfers as they sent. Timely and accurate data about these students are, therefore, paramount for educational institutions to meet student needs.

As shown in table 20, the most frequently reported reason by the freshman 4→2 transfers was "to attend a less expensive school." Other major reasons given by more than one-third of them included "to attend school closer to home" and "to attend school where I feel more like I belong."

Slightly less than one-fourth of the freshman 4→2 transfers reported that their grade-point averages were too low to continue in 4-year colleges. While data were not available in NLS, other studies (e.g., Kuznik, Maxey, & Anderson, 1974) have found that many of those 4→2 transfers hoped to raise their grade-point averages in the 2-year college and than continue their study in a 4-year college. The 2-year college may serve as a place for "recuperation" for those 4-year college students who suddenly find that their achievement was below the college standard, but who still wanted to continue higher education. Two-year colleges offer a chance for students who otherwise might have to withdraw entirely. This could be viewed as a positive aspect of transferring, because the majority of the freshman 4→2 transfers (above 92 percent) had middle or high academic ability and hence have the ability necessary to complete a four-year college program.

Among the sophomore 4→2 transfers, the financial concern–"to attend a less expensive school"–was again the most frequently indicated reason for transferring (see table 21). This seems to suggest that the financial cost of attending a college was a major factor to many students who moved from a 4-year to a 2-year college, since most 2-year colleges have lower student costs than do 4-year colleges. This financial factor was particularly critical among lower SES students. As shown in tables 22 and 23, relatively more low SES students than high SES students reported the need to attend a less expensive school as a reason for changing schools. This trend was less consistent or not shown among the other three transfer groups. Thus, 2-year colleges also seemed to provide opportunities for the financially disadvantaged to continue a higher education.

Table 22.--Percentage of freshman transfers indicating "to attend a less expensive school" as a reason for changing schools: by SES

Socioeconomic status	Transfer categories			
	4→2	4→4	2→4	2→2
High:	38.46	25.73	5.71	16.98
	(77)	(254)	(78)	(36)
Middle:	48.60	30.19	4.86	21.05
	(77)	(184)	(76)	(50)
Low:	58.63	45.23	3.45	15.79
	(25)	(40)	(23)	(23)

NOTE: Figures in parentheses are cell sample sizes.

Table 23.--Percentage of sophomore transfers indicating "to attend a less expensive school" as a reason for changing schools: by SES

Socioeconomic status	Transfer categories			
	4→2	4→4	2→4	2→2
High:	43.11	21.57	0.70	26.45
	(35)	(244)	(209)	(16)
Middle:	30.50	25.82	2.18	25.65
	(31)	(193)	(298)	(23)
Low:	71.03	21.91	2.89	19.79
	(15)	(53)	(80)	(10)

NOTE.--Figures in parentheses are cell sample sizes.

B. Reasons Given by 2→4 Transfers

As shown previously in chapter II and other studies (e.g., Burt, 1972), the number of 2→4 transfers is the largest among the various transfer groups, and the number is increasing. Consequently, their reasons for transferring are of particular importance.

Among the freshman 2→4 transfers, the major reasons for changing schools were related primarily to career development. More than 75 percent of them reported as their reason "attending a school that would give them better career opportunities," and about 61 percent reported as their reason "attending school where they could maximize their intellectual and personal development." Other major reasons included "former school did not offer courses I wanted," "to attend a larger school," and "to have more group and social activities of interest" (see table 20).

Unlike 4→2 transfers, few 2→4 transfers reported attending a smaller, less expensive school or a school closer to home as their reasons for changing schools. None of the 2→4 transfers, as expected, reported transferring because their grades were too low to continue (see table 20).

Over 9 out of 10 of the sophomore 2→4 transfers simply indicated that they transferred because they wanted to continue their education (see table 21). This is logical because the second year in the 2-year college is generally the final year for most students, and continuing in a 4-year college is an obvious choice if a person wants to receive more education. An interesting question would be to examine those 2-year college graduates who would like to continue study in a 4-year college but cannot, whether for personal, social, or educational problems; unfortunately, the current NLS data do not provide answers to this question.

C. Reasons Given by Horizontal Transfers

There are two groups of horizontal transfers: (1) students who moved between 4-year colleges, and (2) students who moved between 2-year colleges. While transfers in these two categories may be different in their background (as discussed in chapter III), their reasons for transferring appeared to be quite similar. Results indicate that the search for better career opportunities and better intellectual or personal development was the major underlying factor. The majority of students in both groups reported that they transferred because they wanted to attend a school that would give better career opportunities and would maximize intellectual and personal development (see tables 20 and 21). A significant portion of 2→2 and 4→4 transfers also indicated that they transferred because their interests changed and the former school did not offer the courses they wanted.

Other frequently reported reasons included "to attend a school closer to home" and "to attend a school where they could have more group or social activities of interest." Very few horizontal transfers indicated that they transferred because grades were too low to continue in the same school.

D. Summary

Reasons for changing schools reported by the transfers were tabulated by year of transfer (freshman or sophomore) and transfer category.

Among the freshman and sophomore 4→2 transfers, the major reason reported was to attend a less expensive school. Being closer to home and being in a smaller school, as well as increasing career opportunities, were also reported as reasons by substantial percentages in both groups. Although the literature suggests that low academic averages are a common reason for transferring from a 4-year to a 2-year college, a majority of students in this sample did not report that this was a reason. Less than one-fourth of both the sophomore and freshman transfers indicated that their grades were too low to continue in the 4-year college. It should be noted, however, that transfers with low grades may tend to rationalize their failure by emphasizing other reasons for transferring.

The 2→4 transfers gave reasons that would be expected from students who are moving from 2-year to 4-year schools. Freshmen wanted a larger school, with more academic, career, and social opportunities; sophomores wanted generally the same things, in addition to a desire to continue their education.

The horizontal transfers, whether in the 2-year or 4-year institutions, tended to report similar reasons for transferring. The substantial percentages of horizontal transfers who reported a variety of reasons for changing schools seem to suggest that there are large numbers of students whose interests and needs were not well matched with their original college choices. This is a major assumption for the hypothesis tests of the person-institution incongruency in the following chapter.

VI. PERSON-INSTITUTION INCONGRUENCY AND TRANSFERRING

The transfer phenomenon is a complex process. Many students may plan to transfer to another college after completing a program or studying for some time in a college. This is particularly true among vertical transfers. As shown in previous chapters, many lower SES students enrolled in a 2-year college first in order to reduce financial pressure of college attendance, and then continued in a 4-year college. However, many other transfers may not have planned to transfer when they entered college. Their transfer may have resulted from some unexpected personal or institutional factors. To explore such potential explanatory factors in an objective way (as opposed to student's self-reported reasons) is the major purpose of the analyses in this chapter.

Social psychologists have suggested that change often results from an incongruency between the individual and the environment (e.g., Getzels, 1965). Transferring as a change in educational plans and direction may be viewed as an outcome of some type of "misfit" or incongruency between the student and the environment; the change or transfer occurs in order to find a better "fit." The data reported thus far in this study suggest support for this theoretical postulation. Consequently, some hypothesis testing seems appropriate. The NLS data allowed for the formulation and testing of three "incongruency" hypotheses:

(1) *Ability-Challenge Incongruency*: Students of high ability at a less academically challenging college are likely to transfer to a more academically challenging college, and the opposite will occur with students of low ability.

(2) *Expectation Incongruency*: Students whose intellectual, personal, and social expectations are not met by their initial college choice are likely to transfer to another institution.

(3) *Financial Support-Expense Incongruency*: Low-SES students without financial aid are more likely than low-SES students with financial aid or high-SES students to transfer to a less-expensive institution.

A. Ability-Challenge Incongruency

The academic challenge of a college was indicated by the college selectivity index; this type of information, as mentioned previously, was not available in the NLS data, and was obtained in part from other sources (Astin, 1971).[1] The sample was reduced since not all colleges had the supplementary information.

Four-year college students who transferred by October 1973 were selected for this analysis. (Two-year college students were not involved because there were only a few colleges of high selectivity level). Colleges were grouped into two categories: those with selectivity level greater than or equal to 4 were classified into a "high" group, and all others, a "low" group. Based upon this classification, the nature of transferring was defined as follows: (1) high→low, transferring from high to low selectivity level colleges, (2) low→high, transferring from low to high selectivity level colleges; (3) low→low, transferring from low to low selectivity level colleges; and (4) high→high, transferring from high to high selectivity level colleges.

Percentage of transfers in these categories within each student academic ability level were then computed, and they are presented in table 24. The results show that less-able students were more likely than very-able students to transfer from high to low selectivity-level institutions. The percentage of transfers of low ability moving from high-selectivity colleges to low-selectivity colleges was higher than transfers to high ability (about 89 percent versus 61 percent). The same trend also appeared between low and middle ability transfers, and between middle and high ability transfers although it was not statistically significant. The results also show that more-able students moved from the low- to high-selectivity institutions. The difference between high- and middle-ability transfers was significant.

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[1] Selectivity index is based upon the average SAT and/or ACT scores of the entering students. There are eight levels of selectivity, 1 being the lowest and 7 being the highest level, and 0 (unknown) indicating no direct estimate of selectivity was available. In general, the "unknowns" tend to be around levels 1 and 2 (Astin, 1971, p. 24).

Table 24.–Percentage of students in each type of transferring: by ability (4-year college)

Selectivity of initial college	Selectivity of destination college		Student ability	N
	High	Low		
High:	11.10%	88.90%	Low	9
	34.20	65.80	Middle	38
	38.94*	61.06*	High	95
Low:	19.04%	80.96%	Low	21
	15.26	84.74	Middle	118
	30.36†	69.64†	High	112

* The high ability group significantly differed from the low ability group ($p<.05$, a two-tailed test).
† The high ability group significantly differed from the middle ability group ($p<.01$, a two-tailed test).

Based upon the above findings, it is concluded that ability-challenge incongruency is an explanation of the transfer process in 4-year colleges. It should be noted that a large proportion of transfers of high ability moved from highly selective to less selective colleges (see table 24). This may indicate that a large number of very-able students may suddenly find themselves "lost" among a group of very highly able students, and thus move to other colleges where their ability or talent can more easily be shown or appreciated. This may also be a function of personality; some students may be unable or unwilling to withstand the pressures of competition associated with highly selective institutions.

B. Expectation Incongruency

On entering a college, a student may have certain expectations about the institution regarding intellectual, personal, and social development. When such expectations are not met, the student may become frustrated or dissatisfied with the institution and seek a mechanism to cope with the frustration. Transferring is one mechanism for coping when frustration becomes too great. [Rootman (1072) used this interactional theory to explain voluntary withdrawal.]

The expectation incongruency may be reflected in the student's measured satisfaction with various aspects of college education, such as the quality of faculty members and the intellectual and social life on campus. It is thus postulated that dissatisfied students will tend to be more likely to transfer than satisfied students, given that their academic performance or general academic ability levels are equivalent.

In the NLS first followup survey (fall-winter 1973), students were asked to indicate how satisfied they were with (1) the ability, knowledge, and personal qualities of most teachers; (2) the social life; (3) development of work skills; and (4) intellectual growth. The ratings were on a 5-point scale, ranging from very satisfied to very dissatisfied. A factor analysis revealed that development of work skills and intellectual growth reflected a common factor; thus, the simple average of the two ratings was used as one measure to reflect academic integration. The ratings on faculty quality and social life each loaded primarily on separate factors and were consequently treated as separate variables. These three variables together with high school grades (as a measure of general academic ability) and college grades were used as predictors in the analyses. The criterion variables were four binary variables derived from students' college-going status in October, 1974: 4→4 transfers versus persisters, and 2→4 transfers versus persisters. They were all coded in binary fashion with transfers having a value of one.

Multiple regression analyses were performed. The results, persented in tables 25 and 26, partially supported the hypotheses. Dissatisfaction with faculty quality and social life was related to 4→4 transfers, even after academic performance was controlled. As shown in table 26, 4→4 transfers were more dissatisfied (i.e., had higher scale scores) with faculty quality and social life than were the persisters. The 4→4 transfers, however, were at least as much satisfied with their intellecutal growth as were persisters. This seemed to indicate that expectation incongruency with respect to faculty quality and campus social life was a factor in student 4→4 transferring.

Dissatisfaction with faculty quality was a factor in 4→2 transfers; they were more dissatisifed with faculty quality than were persisters, even after achievement was controlled. Dissatisfaction with social life and intellectual development, however, were not related to 4→2 transferring.

For 2-year college transfer students, dissatisfaction with college education did not seem to be a major factor in transferring. After achievement was considered, only dissatisfaction with faculty quality was related to 2→2 transfers; more transfer students than persisters were dissatisfied with the quality of faculty members in general. No significant relationships were found between other satisfaction scale scores and 2→2 transfers.

The 2→4 transfer students seemed to be in general more satisfied with faculty quality and intellectual development than persisters. The relationship, however, was not significant.

Table 25.–Group means and standard deviations on academic performance and satisfaction scales

	Academic performance[1]		Dissatisfaction with[2]			Sample N
	High school grades	College grades	Faculty quality	Social life	Intellectual development	
A. 4-year college						
Persisters: Mean	6.62	5.73	2.04	2.21	2.33	3,076
S.D.	1.14	1.28	.96	1.08	2.60	
4→4 Transfers: Mean	6.55	5.84	2.12	2.34	2.32	852
S.D.	1.16	1.30	.95	1.11	2.47	
4→2 Transfers: Mean	5.99	4.90	2.34	2.16	2.38	166
S.D.	1.20	1.25	1.07	1.01	.88	
B. 2-year college						
Persisters: Mean	5.48	5.43	2.01	2.30	2.35	501
S.D.	1.20	1.24	.97	.99	2.81	
2→2 Transfers: Mean	5.23	5.22	2.31	2.34	2.30	114
S.D.	1.20	1.26	1.12	1.10	.91	
2→4 Transfers: Mean	6.07	5.92	1.89	2.35	2.15	639
S.D.	1.29	1.23	.86	1.08	1.27	

[1] High school and college grades were on an eight-point scale, 8 indicating mostly A, and 1, mostly below D.

[2] A higher score indicates higher dissatisfaction.

Table 26.–Standardized regression weights of academic performance and satisfaction with college on transfers compared to persisters

Predictor	4-year college		2-year college	
	4→4 Transfers	4→2 Transfers	2→2 Transfers	2→4 Transfers
1. High school grades	-0.05**	-0.07**	-0.08	0.15**
2. College grades	.06**	-.10**	.02	.15**
3. Dissatisfaction with faculty quality	.03*	.05**	.12**	-.02
4. Dissatisfaction with social life	.04**	-.01	-.01	.03
5. Dissatisfaction with intellectual development	-.01	-.01	-.02	-.03
Multiple R	.08**	.16**	.14*	.27**

**p<.01
*p<.05

C. Financial Support and Expense Incongruency

It is commonly assumed that a student's financial capability plays an important role in his access to higher education. When a student aspires to but is unable to afford a college education, he may seek financial aid, enroll in a less-expensive institution, or not attend college at all. It is thus postulated that a low socioeconomic status (SES) student without financial aid will be more likely than a low-SES student with financial aid, or a high-SES student, to ransfer to a less expensive institution.

To test this postulation, students' tuition and fees spent during the first year after high school (before fall 1973), and during the period from fall 1973 through sumer 1974, were used for the classification of colleges. If the expenses were greater than $1,000, the colleges were classified as high-cost schools; if the costs were under $1,000, the colleges were classified as low-cost schools.

Students who transferred by October 1973 were involved in the analyses. The percentages of transfers from each type of college over varying types of transferring by SES are presented in table 27. It can be seen that a large percentage of transfers were moving from high-cost to low-cost schools. Of the 4-year college transfers, the percentages were about 28, 25, and 33 percent, respectively, for all three SES groups. The substantial percentage of transfers of high SES could reflect that they transferred from private to public institutions. The proportions of transfers who moved from low-cost to high-cost colleges were smaller. The majority of transfers moved among colleges having about equal costs.

Those transfers moving from high-cost to low-cost institutions were further cross-classified by SES and receipt of financial aid. The results (in percent) partially support the hypotheses. For the 2-year college transfers, low-SES students without financial aid were more likely than low-SES students with financial aid to transfer from high-cost to low-cost colleges (see table 28). (The difference in percent was 36.66, which was significant at the .05 level.) Students of low SES without financial aid also appeared to have a greater proportion of transfers from a high-cost to a low-cost college than students of high SES. However, the difference was not significant.

For the 4-year college students, the differences between students with and without financial aid at each SES level with respect to transferring from high-cost to low-cost schools were not consistent. Why low-SES transfers with financial aid were more likely than those without financial aid to more from high-cost to low-cost colleges is unknown.

Table 27.–Percentage distributions of transfers[1] by college cost, type of transfer, and SES

College cost	4-year college[2]			2-year college[3]		
	SES			SES		
	Low	Middle	High	Low	Middle	High
High-cost to low-cost colleges	28.31	25.32	33.01	27.87	14.60	22.23
Low-cost to high-cost colleges	8.41	6.94	11.69	4.18	10.36	9.39
Similar cost colleges	63.28	67.74	55.30	67.94	75.04	68.39
Sample N	53	223	298	36	97	96

[1] Transfers are those students who enrolled in college by October 1972 and moved to another college by October 1973.
[2] Includes 4→4 and 4→2 transfers.
[3] Includes 2→2 and 2→4 transfers.

Table 28.–Percentage of transfer students moving from a high-cost to a low-cost college by financial aid and SES

Type of institution	Financial aid recipient	Percentage transferring from high-cost to low-cost colleges		
		Low SES	Middle SES	High SES
4-year[2]:	Yes	32.53 (31)[1]	21.63 (85)	42.01 (65)
	No	22.33 (22)	27.55 (138)	30.57 (233)
2-year[3]:	Yes	6.70 (16)	15.18 (33)	22.18 (16)
	No	43.36* (21)	14.30 (64)	22.40 (80)

* $p<.05$ indicates low SES 2-year transfers with financial aid different from low SES 2-year transfers without financial aid.
[1] Figures in parentheses are sample sizes.
[2] Includes 4→4 and 4→2 transfers.
[3] Includes 2→2 and 2→4 transfers.

D. Summary and Discussion

Incongruencies between the student and the institution were tested in the following three areas: (1) ability-challenge incongruency–the appropriateness of the institution's academic challenge for the student's ability; (2) expectation incongruency–the fulfillment of the student's expectation about the institution; and (3) financial support and expense incongruency–the student's financial capability to meet expenses, with or without financial support. It was asked whether any of these incongruencies promoted an increase in transfer behavior.

Data did support the hypothesis that students of high ability at a less-challenging college would transfer to a more-challenging one; the results also support the hypothesis that students of low ability at a challenging college would transfer to a less-challenging one. In addition, a substantial proportion of transfers from all ability levels tended to move from high- to low-selectivity colleges, while the majority of transfers moved among colleges of similar selectivity levels. The results seemed to suggest that "big fish" (i.e., very able students) may not necessarily like to stay in "big ponds" (i.e., highly selective and thus competitive institutions).

The second hypothesis was that dissatisfied students tend to transfer more than satisfied ones. Results partially supported this hypothesis. Dissatisfaction with faculty quality in particular was positively related to 4→2 transfers, even after achievement was controlled. This seemed to suggest that many students (except those 2→4 transfers) transfer to other institutions as a result of expectation incongruency. However, it should be noted that the strength of the relationships was weak in terms of the proportion of variation in transfer accounted for by the satisfaction scale scores. It should also be noted that the scales may not be very reliable, since only one or two items were used. Better scales should be used in future studies.

A common assumption is that a student with limited funds and without financial aid will be more likely to transfer to a less expensive institution than his counterpart with financial aid. The NLS data revealed that a substantial percentage of transfers moved from high-cost to low-cost colleges at each SES level. When further cross-classified by receipt of financial aid, the results supported the hypothesis only for the 2-year college transfers. The majority of transfers moved among colleges of approximately the same cost. Only a small proportion of transfers moved from less- to more-expensive colleges. These results suggested that financial support may be an important factor for some transfers in the 2-year college. The financial problem may be of more importance in the original access to 4-year colleges.

VII. CONCLUSION AND IMPLICATIONS

Transferring from one college to another, particularly between 2-year and 4-year institutions, has become an increasingly important issue in higher education. The scope of the literature on transfers in higher education is, however, not broadly substantive or in any way theoretical. Articles generally range from, for example, opinion papers (e.g., Pasqua, 1974), to prediction of transfers' academic success at particular colleges (e.g., Nickens, 1972), to a comparison of persisters and transfers at particular institutions (e.g., Andersen & Peterson, 1973). While these studies have value in themselves, they generally fail to contribute adequately to an overall perspective which would be useful for decisions or policymaking at a national level. It is with this background that this analysis of the transfer process was conducted.

Data for this study were drawn from the base-year and the first two followup surveys of the National Longitudinal Study of the High School Class of 1972 (NLS). The longitudinal nature of the data and the involvement of about 10,000 sample students initially enrolled in about 1,800 institutions of higher education allowed this study to address many questions regarding college transfers from a national perspective. The issues covered in this report included the extent of college transfer, the relationship between background variables and transferring, the differences between the 4-year college native students and transfers from the 2-year institutions, and the reasons for transferring. It should be noted, however, that the data available cover a time span of only 2½ years. Consequently, some long-range questions, such as those related to attrition and graduation rates, were not addressed in this study.

The above issues were examined for four types of transfer students: the 4→4 transfers (students who transferred between 4-year institutions); the 4→2 transfers (students who transferred from a 4-year to a 2-year institution, often labeled reverse transfers); the 2→2 transfers; and the 2→4 transfers (vertical transfers). In general, the transfer students differed from persisters and withdrawals on socioeconomic status, academic performance, and aspiration (see chapter III), but the pattern of differences depended on the type of transfer. For example, 4→4 transfer tended to be the result of high aspiration or motivation whereas 4→2 transfer was more the result of academic or financial difficulty in the 4-year institution (see chapters III, V, and IV).

Students moving from 2-year to 4-year institutions constituted the largest transfer group. This is consistent with findings of other studies (e.g., Van Alstyne, 1974). By the end of the second year after initial matriculation, about one-quarter of the 2-year college students transferred to the 4-year institutions. This transfer rate might have been greater if the data had covered a longer period of time. At any rate, the data supported the claim that 2-year colleges have become a major source of students for 4-year institutions (Willingham, 1972). Perhaps adequate attention should be given to the admission policy and recruitment effort that are directed to 2-year college students.

Compared with those 2-year college students who did not transfer, 2→4 transfers in general had higher scores on socioeconomic status and high school and college grades, and were likely to major in academic fields of study (see chapter III). However, they were somewhat lower on these measures than those students who entered the 4-year institutions immediately after high school graduation (see chapter IV). They appeared to be a group of students with middle SES and academic performance. This finding supports the claim that the 2-year college has become an alternative route to a college degree for students of middle SES and academic performance (see Holmstrom & Bisconti, 1974).

Data also indicate that whites had a greater 2→4 transfer rate than blacks, and blacks had a greater rate than Hispanics (see chapter II). The South had the highest and the West had the lowest 2→4 transfer rates. This may indicate that a greater proportion of students in the South took the 2→4 transfer as an alternative path for a college degree to reduce their college-education expense. It may be a reflection of the fact that the West has a greater proportion of Hispanics than the other regions and Hispanics had the lowest 2→4 transfer rate among the three race groups. These trends may have an impact on the final proportion fo students receiving a 4-year college degree, for such populations defined by race and region. Research efforts should be directed to the question of why Hispanics are more likely than others to end up with their highest education at the 2-year college level. One might wonder whether it is a motivational or economical problem. If the latter problem exists, certainly some direct interventional programs are needed.

While many students have indicated that men were more likely than women to transfer from a 2-year to a 4-year institution (e.g., Holmstrom & Bisconti, 1974; Van Alstyne et al., 1973), the NLS data did not reveal any significant sex differences in the 2→4 transfer rates (see chapters II and III). The sex differences found in other data which cover a long period of time, may indicate that a greater proportion of men than women reenter college after a few years of work. Future NLS data will certainly be useful in testing this assumption.

The opposite type of transferring, that is, moving from a 4-year to 2-year college, was also noteworthy. As of the end of the second year after matriculation, about 4 percent of 4-year college students had transferred to a 2-year college. Many of those students seem to have had academic and financial difficulty in the 4-year institution, which may indicate some misguidance during the selection of a college. Transferring to a 2-year college may allow them to succeed academically or to redirect their goals, since the 2-year colleges in general are less competitive and have lower academic standards (Kuznik, 1972). While many of the 4→2 transfers may eventually return to a 4-year college (see chapter II), many others may not. Perhaps this type of transfer student needs more counseling during college planning, since, in general, they had lower high-school grades than did persisters and 4→4 transfers.

The 2-year college may serve as a "warming-up place" for many students to readjust their plans and goals and to obtain additional academic preparation for further study. As mentioned previously, to go to a 2-year college first, and then transfer to a 4-year college, has become an attractive alternative route to a college degree for students of lower SES, students of middle academic performance (e.g., Holmstrom & Bisconti, 1974; also chapters III and IV), and perhaps students without clear career goals. However, in order to provide students with a smooth transition from 2-year to 4-year colleges or vice versa, better communication between these two types of colleges and better counseling may be needed. In fact, the need for better counseling services was indicated by more than a quarter of the 2→4 transfers (see chapter V). Previous studies have also pointed out the need for improvement in this area (e.g., Knoell & Medsker, 1965; Trivett, 1974; Kintzer, 1973).

Horizontal transfers among 4-year institutions were also substantial. About 16 percent of 4-year college students transferred to another 4-year institution within 2 years after initial matriculation. This group of students tends to have higher SES and college grades but lower aptitude test scores than persisters (see chapter IV). It seems that motivation or aspiration was an important factor in this type of transferring. As the data suggested, 4→4 transfers were looking for better opportunities for career or personal development (see chapter V). Those students' lower aptitude test scores may hinder their attending colleges of their preference initially, and transferring is a solution.

Relatively more 4→4 transfers than persisters reported dissatisfaction with the quality of faculty and their social life on campus, controlling for academic performance (chapter VI). This suggests that the incongruencey between the student's expectations and his college experience may be another important reason for 4→4 transferring. It is not known whether this incongruency is due to correctable faults in the college or to unrealistic student expectations; however, providing the high school graduate with better information about prospective colleges would seem to be a way to reduce it.

The person-institution incongruency explanation of transferring is further supported by the finding that students of low ability are more likely than students of high ability to transfer from highly selective to less selective institutions, and students of high ability are more likely than students of low ability to transfer from the low-selectivity to the high-selectivity institutions. This finding seems to suggest that the discrepancy between individual ability and institutional academic challenge leads a student to transfer as a means of maintaining an ability-challenge equilibrium.

Financial condition also seemed to be an important factor in transferring. Many students transferred to a lower-cost institution regardless of socioeconomic background (see chapters V and VI). Perhaps it is a natural phenomenon for students to look for an institution that costs less but still provides a good education. However, it should be noted that proportionally fewer 2→4 transfer students than 4-year college native students received scholarships, fellowships, or grants (see chapter IV). It is possible that many 2-year college graduates did not continue in a 4-year institution because of the lack of financial support (Kuhns, 1973). Although the receipt of such financial aid may be based upon achievement, achievement may in turn be affected by financial condition. A careful reexamination of the financial aid programs, giving special attention to the plight of transfer students, is needed (Van Dusen, 1974; Beals, 1974). Perhaps a separate financial aid program for transfer students would be helpful.

Transferring among colleges, particularly between the 2-year and the 4-year colleges, will probably increase with the expansion of community colleges and open admissions policies. From a practical point of view, future studies attempting to identify who will transfer to what type of college may not yield much additional information to what has already been found—2-year college students with high aspirations and high academic performance will be likely to transfer to a 4-year institution, and 4-year college students with financial and/or academic difficulty will be likely to transfer to a 2-year college, if they are highly motivated. What seems to be needed is a study to identify the problems that transfer students, particularly those 2→4 and 4→2 transfers, may frequently encounter in the areas of adjustment to a new environment. Such a study may provide students with a sound basis for careful selection of colleges and refinement of curriculum and career plans. The study may also provide college administrators with a basis for establishing or improving admission policy, financial aid programs, and counseling services.

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Appendixes

A. Description of the NLS Data Base: Sample, Procedures, and Instruments

B. Percentage and Estimated Total at Each Study-Status Point Over Three Points in Time

C. Percentage of Students in Various Study-Status Categories Crossed by Background Variables

D. Definition of Psychological Constructs: Self-Esteem, Locus of Control, and Life Goals

APPENDIX A
DESCRIPTION OF THE NLS DATA BASE: SAMPLE, PROCEDURES, AND INSTRUMENTS

The NLS base-year and the first and second followup data were used to answer the questions posed in the introduction. The NLS data base is exceptionally rich, and its longitudinal design based upon a national probability sample permits analyses that provide valuable information concerning the psychological, educational, and career development of people in their early adulthood. The NLS study was designed to discover what happens to young people after they leave high school and to relate this information to their prior educational experiences and personal and biographical characteristics. Educational and work experiences as well as plans, aspirations, attitudes, and personal background characteristics were measured over three points in time on a sample of over 20,000 high school seniors of the class of 1972. The base-year data were collected in the spring of 1972, the first followup data were collected in the fall and winter of 1973-74, and the second followup data were collected in the fall and winter of 1974-75.

A. Sample Design

The sample design is a stratified, two-stage probability sample of all schools, public and private, in the 50 states and the District of Columbia, which contained 12th-graders during the 1971-72 school year. The first-stage school sampling frame was constructed from computerized school files maintained by the Office of Education and the National Catholic Education Association. It was divided into 600 final strata based upon the following variables:

- Type of control (public or nonpublic)
- Geographical region (Northeast, North Central, South, and West)
- Grade-12 enrollment (fewer than 300, 300 to 499, and 600 or more)
- Proximity to institutions of higher learning (3 categories)
- Percent minority group enrollment (8 categories, public schools only)
- Income level of the community (11 categories, public schools; 8 categories, Catholic schools)
- Degree of urbanization (10 categories)

The number of classes defined by a cross-tabulation of the above stratification variables is far greater than the number of classes that could, in fact, be utilized in the stratification. Consequently, it was necessary to consolidate, or ignore in some instances, some of the stratification criteria. The final strata involved priority considerations dictated by the higher ranking of the stratification variables, and judgment in consolidating the various classes to produce strata of the desired sizes.

Schools in the smallest grade-12 enrollment strata (fewer than 300 seniors) were selected (without replacement) with probabilities proportional to their estimated number of senior students. Schools in the remaining enrollment strata were selected with equal probabilities (again without replacement). The number of disadvantaged students was increased by sampling schools in low-income areas and schools with high proportions of minority-group enrollments at twice the rate used for the remaining schools. Income for any area was based upon either an adjusted 1960 census median income of the county containing the school or the average adjusted gross income determined from the 1966 tax returns with the same 5-digit Zip Code as that for the school. The minority group enrollments for individual schools were determined from either the records of the Office of Civil Rights or the 1970 census data by counties.

Within each final stratum, four schools were selected and then two of the four were randomly designated as the primary selections. The other two schools were retained as backup or substitutes and used in the sample only if one or both of the primary schools did not cooperate.

The second stage of the sampling procedure consisted of first drawing a simple random sample of 18 students per school and then selecting 5 additional students as replacements for possible nonparticipants among the 18. In both cases, the students within a school were sampled with equal probabilities without replacement.

The study excluded schools for physically or mentally handicapped students, schools for legally confined students, and schools (such as area vocational schools) where students were also enrolled in other institutions included in the sampling frame. Also excluded were special categories of students, such as early graduates and adult education students.

B. School Representation

The sample design involved 1,200 primary sample schools and 21,600 students (18 per school). Of the 1,200 primary sample schools, 948 participated in the base-year survey (spring 1972), 21 had no senior students enrolled, and 231 either refused to participate or could not, due to receiving the request too late in the school year. There were 96 schools from the backup sample that also participated as well as 26 other "extra" base-year schools. The latter were termed "extra" if, in the end, both primary sample schools from the stratum participated.

In the summer of 1973, the National Center for Education Statistics (NCES) made further attempts to secure the participation of the 230 primary sample schools which had not participated in the base-year survey, and to replace the 21 schools that had no seniors. This "resurvey" activity, initiated prior to the first followup survey, involving securing school cooperation, choosing random samples of up to 18 former 1972 seniors per school, and then securing the last known address of those selected. This activity was successful for 204 of the 230 primary sample schools.

A sample of 200 school districts was also solicited during the base year to identify public schools not in the original sampling frame. Forty-five such schools were identified, 23 were randomly selected as an "augmentation" sample, and 16 of these schools participated in the first followup survey.

In summary, data were collected from students in 1,070 participating schools in the base-year survey, 1,300 schools in the first followup survey, and 1,318 in the second followup survey. The total number of participating schools, by survey, is summarized in table A-1.

Table A-1.–Total number of participating schools, by survey

Item	Base-year survey	First followup survey	Second followup survey	Final NLS sample
Primary sample	948	1,153	1,153	1,153
Backup sample:				
"Extra" in base-year	26	–	18	18
Other	96	131	131	131
Augmentation sample	–	16	16	16
Total	1,070	1,300	1,318	1,318

C. Instruments

1. Base-Year Instruments

Each student in the sample was asked to complete a Student Questionnaire which dealt with factors related to the student's personal-family background, educational and work experiences, plans, aspirations, attitudes, and opinions.

In addition to the Student Questionnaire, each student took a 69-minute test, composed of six subtests measuring both verbal and nonverbal ability. Vocabulary, Picture Number (measure of associative memory), Reading, Letter Groups (measure of inductive reasoning), Mathematics, and Mosaic Comparisons (measure of inductive reasoning), Mathematics, and Mosaic Comparisons (measure of perceptual speed and accuracy).

Base-year data were also obtained from a student's School Record Information Form (SRIF). Items on the SRIF pertained to the student's high school curriculum, grade-point average, credit hours in major courses, and, if applicable, his or her position in ability groupings, remedial-instruction record, involvement in certain federally supported programs, and scores on standardized tests.

Finally, information from a School Questionnaire and one or two Counselor Questionnaires were not obtained from schools involved in the "resurvey" activity.

2. First Followup Instruments

Two forms (A and B) of a First Followup Questionnaire were developed and designed for self-administration by the student. Form A was mailed to each sample member who responded to the base-year Student Questionnaire. Seniors from the high school class of 1972 who were unable to participate in the base-year survey (usually because of time and scheduling considerations) were mailed Form B of the questionnaire. Questions 1 through 85 were identical on both questionnaire forms. These questions dealt with information concerning the respondent's activity state (e.g., education, work, etc.) in October 1972 and October 1973; his or her socioeconomic status; work and educational experiences since leaving high school; and future educational and career plans, aspirations, and expectations. Form B of the First Followup Questionnaire contained an additional 14 questions to take the place of missing base-year information.

Most of the questions on the base-year Student Questionnaire and First Followup Questionnaire were of the forced-choice type. Open-ended, or free-response, questions were limited to questions involving dates, income, number of hours or weeks worked, and the like.

3. Second Followup Instrument

The nature and format of the Second Followup Questionnaire were much the same as those of the previous questionnaires. Questions were constructed to obtain information concerning the individual's educational and work experience, plans, aspirations, attitudes and opinions, and family status. Many of the questions were the same as the ones used in the previous surveys to maintain the longitudinal nature of the study, while some questions were added to obtain information unique at the time of the survey. The new questions were all field tested before they were included in the instrument.

D. Procedures

1. Base-Year Data Collection

The bulk of the student data was collected in April, May, and June 1972 through group administration in each school by local school-based survey administrators. Survey administrators also completed School Record Information Forms (SRIFs) for each participating student and administered in the School and Counselor Questionnaires.

2. First Followup Data Collection

The first step in data collection involved an extensive tracing operation to update name and address files. The major mailout of about 23,000 First Followup Questionnaires to the last known addresses of potential respondents was made on October 23-24, 1973. This mailout was followed by a planned sequence of reminder

postcards, additional questionnaire mailings, and reminder mailgrams to nonrespondents. Active mail return efforts continued through December 1973; and by early February 1974, the questionnaire return rate by mail was 60.9 percent.

The names and addresses of those sample members who failed to mail back their questionnaires were than turned over to the Bureau of the Census for personal interview in accordance with a Bureau arrangement with the U.S. Office of Education. This personal interview phase of first followup data collection continued until April 7, 1974, at which time the overall response was 21,350, approximately 92.7 percent of the potential respondents. Of the 16,683 seniors who completed a Student Questionnaire, 15, 635 took part in the first followup survey—a sample retention rate of 93.7 percent.

3. Second Followup Data Collection

The tracing operations used in the first followup survey were applied to the second followup. On October 7, 1974, questionnaires were mailed to the last known addresses of the 22,364 sample members whose addresses appeared sufficient and correct and who had not been removed from active status by prior refusal, death, or other reason. Active mail return efforts continued through December 1974, and by March 1975, 15,058 persons had responded, approximately 68.3 percent of the initial mailouts. The names and addresses of those sample members who failed to mail back their questionnaires by January 1975 were turned over to 12 RTI offsite field interviewers for personal interviews. The interviews of 5,814 individuals increased the overall response to 20,872, approximately 93.3 percent of the initial mailouts. Of the 21,350 persons who completed a First Followup Questionnaire, 20,194 (94.6 percent) also participated in the second followup survey.

E. Data Processing

The data were manually edited and then keyed to tape after which they were extensively machine edited. The editing process was extremely complex and comprehensive. The editing rules reflected the complexity of the instruments in terms of, for example, skin patterns within the questionnaire. In addition, hard copy resolution was conducted whenever possible in order to resolve problems in the data file. The underlying logic of the whole editing process was to create a data file that was as faithful to the hard copy as possible.

APPENDIX B
PERCENTAGE AND ESTIMATED TOTAL AT EACH STUDY-STATUS POINT OVER THREE

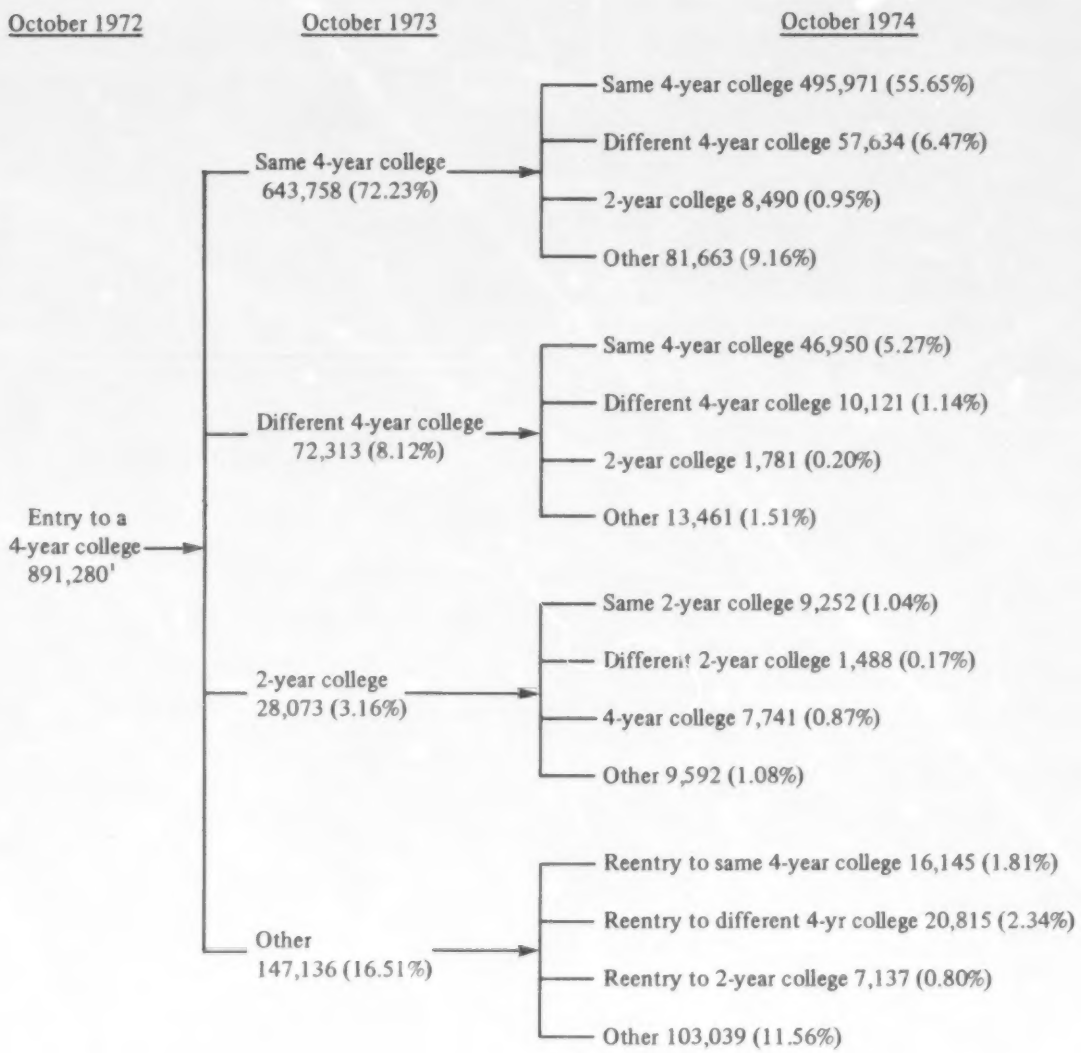
October 1972
October 1973
October 1974
Entry to a 4-year college 891,280[1]
Same 4-year college 643,758 (72.23%)
Same 4-year college 495,971 (55.65%)
Different 4-year college 57,634 (6.47%)
2-year college 8,490 (0.95%)
Other 81,663 (9.16%)
Different 4-year college 72,313 (8.12%)
Same 4-year college 46,950 (5.27%)
Different 4-year college 10,121 (1.14%)
2-year college 1,781 (0.20%)
Other 13,461 (1.51%)
2-year college 28,073 (3.16%)
Same 2-year college 9,252 (1.04%)
Different 2-year college 1,488 (0.17%)
4-year college 7,741 (0.87%)
Other 9,592 (1.08%)
Other 147,136 (16.51%)
Reentry to same 4-year college 16,145 (1.81%)
Reentry to different 4-yr college 20,815 (2.34%)
Reentry to 2-year college 7,137 (0.80%)
Other 103,039 (11.56%)

Figure B-1.--Flow chart of college entries and transfers (4-year college)

[1] This comprises 29.40% of the high school class of 1972.

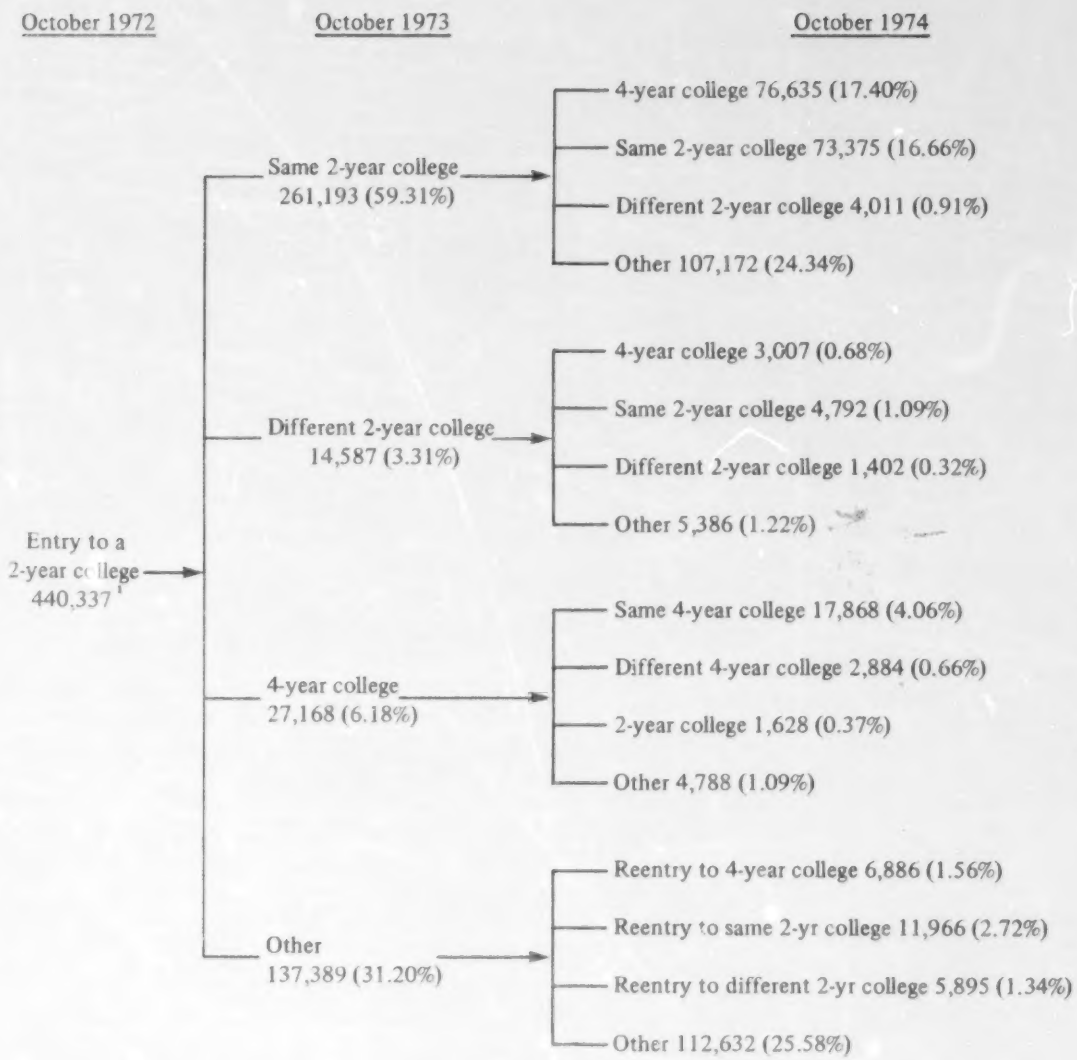
October 1972
October 1973
October 1974
Entry to a 2-year college 440,337 [1]
Same 2-year college 261,193 (59.31%)
Different 2-year college 14,587 (3.31%)
4-year college 27,168 (6.18%)
Other 137,389 (31.20%)
4-year college 76,635 (17.40%)
Same 2-year college 73,375 (16.66%)
Different 2-year college 4,011 (0.91%)
Other 107,172 (24.34%)
4-year college 3,007 (0.68%)
Same 2-year college 4,792 (1.09%)
Different 2-year college 1,402 (0.32%)
Other 5,386 (1.22%)
Same 4-year college 17,868 (4.06%)
Different 4-year college 2,884 (0.66%)
2-year college 1,628 (0.37%)
Other 4,788 (1.09%)
Reentry to 4-year college 6,886 (1.56%)
Reentry to same 2-yr college 11,966 (2.72%)
Reentry to different 2-yr college 5,895 (1.34%)
Other 112,632 (25.58%)

Figure B-2.--Flow chart of college entries and transfers (2-year college)

[1] This comprises 14.56% of the high school class of 1972.

APPENDIX C
PERCENTAGE OF STUDENTS IN VARIOUS STUDY-STATUS CATEGORIES CROSSED BY BACKGROUND VARIABLES

Table C-1.--Percentage of 4-year college students in each study status: by sex

Study status	Sex		Total
	Male	Female	
Persister	58.51	56.32	57.46
4→4 transfer	15.15	17.07	16.07
4→2 transfer	3.37	2.93	3.16
Dropout	22.97	23.67	23.31
Sample N	3,034	2,940	5,974

Table C-2.--Percentage of 4-year college students in each study status: by race

Study status	Race		
	Black	Hispanic	White
Persister	58.42	50.81	57.29
4→4 transfer	11.73	15.17	16.72
4→2 transfer	3.20	9.29	2.87
Dropout	26.66	24.74	23.13
Sample N	673	148	4,930

Table C-3.--Percentage of 4-year college students in each study status: by SES

Study status	SES		
	Low	Middle	High
Persister	52.58	54.44	61.38
4→4 transfer	12.79	15.13	17.79
4→2 transfer	2.40	3.48	3.07
Dropout	32.23	26.94	17.77
Sample N	853	2,473	2,643

Table C-4.--Percentage of 4-year college students in each study status: by aptitude

Study status	Aptitude		
	Low	Middle	High
Persister	37.71	53.10	63.48
4→4 transfer	15.32	14.96	17.31
4→2 transfer	3.54	3.92	2.62
Dropout	43.43	28.02	16.60
Sample N	368	1,627	2,274

Table C-5.--Percentage of 4-year college students in each study status: by high school program

Study status	High school program		
	General	Academic	Voc tech
Persister	48.04	60.45	43.87
4→4 transfer	14.13	16.96	9.44
4→2 transfer	3.79	3.04	2.59
Dropout	33.44	19.56	44.09
Sample N	1,201	4,482	290

Table C-6.--Percent of 4-year college students in each study status: by region

Study status	Region			
	North-east	North central	South	West
Persister	62.09	57.19	55.53	52.15
4→4 transfer	16.11	16.05	16.00	16.21
4→2 transfer	2.60	2.21	3.47	5.81
Dropout	19.20	24.54	24.99	25.83
Sample N	1,437	1,623	2,113	801

Table C-7.–Percentage of 4-year college students in each study status: by educational aspiration

Study status	Educational aspiration when high school senior		
	<College	2-year college	≥4-year college
Persister	12.57	21.14	60.27
4→4 transfer	4.89	5.39	16.78
4→2 transfer	4.06	8.27	3.03
Dropout	78.47	65.20	19.91
Sample N	211	146	5,478

Table C-8.–Percentage of 4-year college students in each study status: by field of study

Study status	Field of study in October 1972	
	Academic	Nonacademic
Persister	59.34	40.56
4→4 transfer	16.51	12.17
4→2 transfer	3.13	3.45
Dropout	21.03	43.81
Sample N	5,084	399

Table C-9.–Percentage of 4-year college students in each study status: by college grade

Study status	Self-reported college performance in October 1973			
	≥A-	B+ to B-	C+ to C-	<C-
Persister	65.42	62.74	55.51	30.79
4→4 transfer	20.57	18.47	13.93	9.19
4→2 transfer	0.73	1.91	4.31	6.40
Dropout	13.28	16.88	26.20	53.62
Sample N	498	2,343	2,475	339

Table C-10–Percentage of 2-year college students in each study status: by sex

Study status	Sex		Total
	Male	Female	
Persister	20.62	17.98	19.38
2→2 transfer	4.33	3.69	4.03
2→4 transfer	24.85	23.82	24.36
Graduate	10.33	16.14	13.06
Dropout	39.88	38.37	39.17
Sample N	1,504	1,414	2,918

Table C-11–Percentage of 2-year college students in each study status: by race

Study status	Race		
	Black	Hispanic	White
Persister	18.14	31.58	18.05
2→2 transfer	3.48	6.80	3.90
2→4 transfer	17.93	9.08	26.05
Graduate	12.04	6.73	13.95
Dropout	48.40	45.81	38.04
Sample N	295	179	2,279

Table C-12–Percentage of 2-year college students in each study status: by SES

Study status	SES		
	Low	Middle	High
Persister	20.79	18.80	19.58
2→2 transfer	2.85	3.84	5.05
2→4 transfer	16.25	22.78	31.95
Graduate	13.43	14.63	9.99
Dropout	46.67	39.95	33.44
Sample N	581	1,539	789

Table C-13.--Percentage of 2-year college students in each study status: by aptitude

Study status	Aptitude		
	Low	Middle	High
Persister	19.02	20.89	17.75
2→2 transfer	5.68	4.68	2.18
2→4 transfer	13.91	22.37	35.91
Graduate	8.58	13.54	14.30
Dropout	52.80	38.52	29.87
Sample N	441	1,091	517

Table C-14.--Percentage of 2-year college students in each study status: by high school program

Study status	High school program		
	General	Academic	Voctech
Persister	18.75	20.28	18.13
2→2 transfer	4.56	3.95	3.06
2→4 transfer	20.46	32.09	10.00
Graduate	9.65	13.93	18.07
Dropout	46.58	29.76	50.73
Sample N	1,050	1,377	490

Table C-15.--Percentage of 2-year college students in each study status: by region

Study status	Region			
	North-east	North-central	South	West
Persister	16.52	16.94	14.72	27.08
2→2 transfer	3.10	4.40	2.87	5.34
2→4 transfer	23.05	25.22	32.07	18.35
Graduate	19.55	14.12	11.90	8.59
Dropout	37.78	39.32	38.44	40.64
Sample N	529	574	898	917

Table C-16.–Percentage of 2-year college students in each study status: by educational aspiration

Study status	Educational aspiration when high school senior		
	<College	2-year college	≥4-year college
Persister	10.65	17.85	22.00
2→2 transfer	2.38	4.92	4.26
2→4 transfer	4.44	8.36	33.42
Graduate	15.33	24.76	9.41
Dropout	67.20	44.12	30.91
Sample N	443	473	1,928

Table C-17.–Percentage of 2-year college students in each study status: by field of study

Study status	Field of study in October 1972	
	Academic	Nonacademic
Persister	20.34	18.31
2→2 transfer	4.26	3.67
2→4 transfer	31.95	9.46
Graduate	9.02	22.78
Dropout	34.42	45.78
Sample N	1,797	854

Table C-18.–Percentage of 2-year college students in each study status: by college grade

Study status	Self-reported college performance in October 1973			
	≥A-	B+ - B-	C+ - C-	<C-
Persister	11.31	18.20	22.52	18.56
2→2 transfer	2.95	2.99	5.15	5.72
2→4 transfer	42.76	29.04	20.50	3.73
Graduate	16.26	16.23	11.18	3.79
Dropout	26.72	33.53	40.65	68.20
Sample N	206	1,104	1,276	154

APPENDIX D
DEFINITION OF PSYCHOLOGICAL CONSTRUCTS: SELF-ESTEEM, LOCUS OF CONTROL, AND LIFE GOALS

Table D-1.–Factor loadings for self-esteem and locus of control items

Item	Self-esteem Factor I	Locus of control Factor II
Self-esteem		
Positive attitude	0.73	-0.09
Equal worth	.72	-.13
Able to do as well as most people	.69	-.05
Satisfied	.65	.08
Locus of control		
Luck more important than work	.08	.60
Try to get ahead, but stopped	-.22	.65
Plans hardly work out	-.22	.73
Accept condition	.04	.62

NOTE.--The internal consistencies (coefficient alphas) are .66 and .50, respectively, for self-esteem and locus of control.

Table D-2.–Factor structure of life goal items

Item	Orientation factors		
	Work	Community	Family
Work scale			
Success in work	0.62	0.13	0.13
Having lots of money	.73	.04	-.09
Finding steady work	.69	.12	.19
Community scale			
Being a leader	.31	.60	.03
Giving children opportunities	.34	.43	.33
Working to correct inequalities	-.22	.81	-.09
Family scale			
Marriage and family	.23	.15	.55
Living close to parents and relatives	.08	.25	.53
Getting sway	.12	.26	-.74
Item not appearing in any scale			
Having strong friendships	.10	.34	.22

NOTE.--(1) The response to each item ranged from not important to very important on a three-point scale.
(2) The coefficient alphas (internal consistencies) were .53, .44, and .30 for the work, community, and family scales, respectively.

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